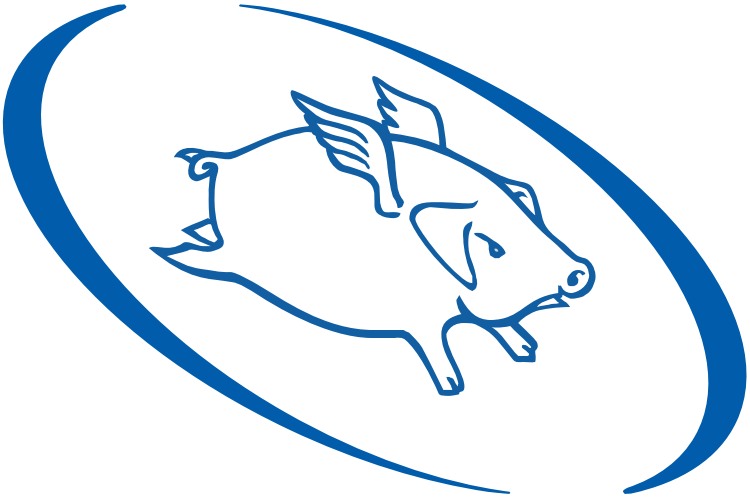

Wholehog Control System

User Manual

Version 3.0.0-EN

Wholehog Control System: User Manual

Flying Pig Systems

by Nick Hunt and Matt Haskins

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Manufacturer's name:	High End Systems
Distributor's name:	High End Systems
Distributor's address:	2105 Gracy Farms Lane, Austin TX 78758, USA

Declares that the product:

Product Name:	Wholehog III
Product Number:	All
Product Options:	All

Conforms to the following EEC directives:

73/23/EEC, as amended by 93/68/EEC

89/336/EEC, as amended by 92/31/EEC and 93/68/EEC

Equipment referred to in this declaration of conformity was first manufactured in compliance with the following standards in 2002:

Safety:	EN60950:2000
EMC:	EN55103-1:1996 (E2)
	EN55103-2:1996 (E2)

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directives and Standards.

Kenneth Stuart Hansen, Compliance Engineer

30 May 2002

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Part I. Introduction

Section 1: Getting Started

Wholehog consoles have been designed to be as easy to use as possible. However, they are also designed to control big, complex lighting rigs (as well as small, simple ones) and so at times operating your console is going to get complex too.

This manual has been written to help you become a proficient Wholehog programmer, wherever you are starting from and whatever kind of lighting you do.

Tip

You can open your console's built in User Manual at any time by pressing the Help button on the Window Control Toolbar, at the top of the right-hand screen.

1.1 The Wholehog Range of Consoles

There are five consoles in the Wholehog range: the Wholehog III, the Hog iPC, the Road Hog, the Road Hog Full Boar and the PC software Hog 3PC; all five run the Wholehog Operating Software, abbreviated to Wholehog OS. This manual describes the Wholehog OS, and generally assumes that you are running it on a Wholehog III console. If you are using another console, almost all of the manual will still apply to you, and you can find information specific to your console here:

The Hog 3PC Software (p.333)

The Hog iPC Console (p.353)

The Road Hog and Road Hog Full Boar Consoles (p.359)

1.2 Where to Start

If you want to get going straight away, go to *Quick & Dirty - A Show in Ten Steps (p.23)*. Otherwise, read one of the two sections designed to help you make the transition to Wholehog OS, according to your previous experience with consoles:

Users New to Moving Light Consoles (p.7)

Wholehog II Users (p.13)

If you haven't used a Wholehog console before but are experienced with other moving light consoles, you may still find the section *Users New to Moving Light Consoles (p.7)* useful.

After that, you can either follow the *Tutorial (p.21)* or simply start using the console and use the *Reference (p.63)* as needed.

1.3 Key

The following conventions are used in the text of the manual:

Position (p.162)	A cross reference to another part of the manual. In electronic versions of the manual (HTML and PDF) these references are clickable hyperlinks.
fixture	A reference to a term in the *Glossary*. In electronic versions of the manual (HTML and PDF) these references are clickable hyperlinks.
Enter	A name of an interface element such as a button, key or window.
(Studio Color)	A button that has a label that is specific to the show, created by the console or the user. The brackets indicate a label that will vary depending on your particular show.
`10 + 12`	Text or other information that you should enter using the numeric keypad or the on-screen or external keyboard.
`[password]`	A description of information that you should enter that is not the literal text.
Record, Enter	Buttons or keys separated by commas show that the keystrokes are sequential. In this case, press the Record key, then the Enter key.
Open + Fixture	Buttons or keys followed by + are held down while the second key is pressed. In this example, hold down the Open key and press the Fixture key.
Setup → Patch → Fixture Schedule	A series of operations that navigate through windows and toolbars.

In the manual the word 'key' is used to indicate a hardware button on the front panel of a Wholehog console. For example: 'press the Enter key'. The word 'button' refers to 'virtual' buttons that can be pressed on the touch screens or clicked on with the trackball or mouse.

You will also find important or useful information highlighted:

Caution

A caution, which has information about hazards to equipment or personnel.

Important

An important note, usually alerting you to situations that require special attention.

Tip

A tip, to help you be more productive in your programming.

Section 2: Users New to Moving Light Consoles

If your previous experience with lighting consoles has been mainly with 'theatre' desks (Strand, ETC, etc.) then this section will introduce you to some fundamental differences that you will find with the Wholehog Operating Software.

When you have finished this section, you may also find the sections on *Abstraction (p.15)* and *Colour Matching (p.16)* useful.

2.1 The User Interface

Most 'theatre' desks use a **command line** to control them. This means that you enter instructions using a keypad, in the form channel 36 at 50. Information shown on displays is limited to pure text, and only one screen layout can be displayed on one monitor at a time.

Wholehog OS is rather different. It has been designed on the principle that you should be able to see any information about your programmed show at any time, and that you should be able to change that information directly if you wish to. In addition to a conventional command line, Wholehog OS uses a **graphical user interface** similar to those found on personal computers. Combined with the touch screens, this interface gives a very powerful alternative way of working. You can arrange multiple windows as you want them on the screens, in order to display whatever information you need. You do not have to write down (or remember) as much, because the window that shows you, say, **groups** that you have programmed also allows you to select those groups simply by touching them. Any object, such as a cue, a group or a **fixture**, can be named as you wish for easy identification.

The advantages of a graphical user interface are far-reaching, and will become fully apparent as you get more familiar with Wholehog OS. For more information, see *The Graphical User Interface (p.97)* and *Working with Windows (p.99)*.

2.2 Referring to Fixtures

Lighting consoles that have been primarily designed to work with 'conventional' fixtures that have only one **parameter** (intensity) generally refer to fixtures by number. These 'channel' numbers usually run consecutively in a single sequence, say from 1 to 200, and each one related to a single DMX address, and so to a single dimmer. With fixtures such as moving lights that have more than one parameter (intensity, position, colour, etc.), each channel refers to a single parameter of the fixture, rather than the whole fixture. If you have a mixed rig of conventional and moving lights, this system can become very confusing.

Wholehog OS treats a fixture as a single entity, no matter how many or few parameters it has. By default, each type of fixture has its own numbering range, so that you would refer to 'Studio Spot 6' and 'Cyberlight 12'. Fixtures can be numbered in any way that you prefer, however. For more information, see *Modifying the User Number (p.148)*.

Wholehog OS treats conventional lights, consisting of a luminaire controlled by a dimmer, as a special kind of fixture known as a 'desk channel'. A desk channel has only one parameter: intensity.

2.3 Palettes

The complexity of modern lighting rigs, especially with the widespread use of moving lights, means that programming can be very time consuming. Palettes help to simplify the process by allowing pre-defined lighting 'elements' to be created and then used as required. Once you have created a palette, such as a particular set of position settings with moving lights, you can recall those settings instantly, and record them into cues.

A great advantage of palettes over the equivalent 'group' features found on many consoles is that when you record a cue using the palette, the cue contains a reference to the palette, rather than the parameter values that the palette contains. If, later, you change the palette then all cues that have been recorded using the palette are also changed. This is especially useful if, for example, the position of a piece of set on stage is moved, and moving lights have been programmed to light it. The palette can be updated once to accommodate the change, rather than in every cue. For more information, see *Working with Palettes (p.187)*.

2.4 Tracking

Tracking is quite a difficult concept at first, but it is a very important one. When a sequence of cues is programmed, the lighting console can store the information in one of two ways: either it records the settings for all the parameters of all the fixtures in the show, or it only records the values that have changed since the previous cue. The second method is called tracking. The following example shows the intensities of four fixtures in three cues:

Fixture:	**1**	**2**	**3**	**4**
Cue 1	100	0	50	50
Cue 2	50	0	100	50
Cue 3	50	100	100	50

With a non-tracking console, the cues would be recorded with the channel levels as shown above. With a tracking console, however, the recorded information would be:

Fixture:	1	2	3	4
Cue 1	100	0	50	50
Cue 2	50		100	
Cue 3		100		

If the intensity has not changed from the previous cue, then no value is recorded for that parameter. During playback, parameters remain at their last assigned level; for example, fixture 1 remains at 50% intensity when cue 3 is played, because no change was recorded.

So, during playback there are two types of fixture parameter value output:

- **Hard Values:** values programmed into the current cue. Hard values are sometimes known as touched values.
- **Tracked Values:** those values assigned in previous cues but that have not yet been changed again or removed from the output. These values are said to have 'tracked through' from a previous cue in which they were Hard Values.

2.4.1 Tracking Through Changes

One advantage of tracking is that changes can be 'tracked through' a series of cues. In the example given above, if you changed the intensity of fixture 2 in cue 1 to 60%, this value would track through into cue 2, since cue 2 has no information for fixture 2 recorded. The value will still change to 100% in cue 3, since there is a hard value recorded there.

Tracking can be very useful when you want to make the same change to a series of cues: for example, you might have a series of cues that include a fixture that lights a part of the set in the same way throughout. If you later want to change the intensity of that light, you can change it in the first cue that it appears, and the change will track trough to all the cues until the next hard value. This saves you from having to reprogramme the change in every cue in the series.

While tracking can help speed up the modification of cues, you may not always want changes to track through. For example, in a theatre show, you probably wouldn't want changes to track through from one scene to the next, and in a music concert, you wouldn't want changes to track through from one song to the next. To prevent changes tracking through, you can record a blocking cue which contains hard values for all parameters that have values at that point in the cuelist, regardless of whether the values have tracked through from previous cues. In the example given above, a new cue, cue 4, would act as a blocking cue:

Fixture:	1	2	3	4
Cue 1	100	0	50	50
Cue 2	50		100	
Cue 3		100		
Cue 4	50	100	100	50

The new cue 4 acts as an end-stop, preventing any future changes to cues 1-3 from tracking through to subsequent cues. For more on working with blocking cues, see *Blocking Cues (p.221)*.

2.4.2 Simultaneous Cues

Another advantage of tracking is that multiple cues can be run simultaneously. Imagine a play where the sun sets outside the window, and characters turn on various lights in the room as the natural light fades. You might create this as an initial sunset cue over 20 minutes, followed by a series of snap cues for the room lights being turned on during the sunset. With a non-tracking console this would cause problems: what would you programme in the cues that turn the room lights on? If you recorded the full state, you wouldn't know what level to assign the sunset fixtures to, as during playback they will have faded down to some indeterminate level during the action of the scene. The cue to turn the room light on is a snap cue, and the result would be a snap change in the sunset as well - not very realistic!

A tracking console allows you to programme just the room lights into a cue, so that the cue won't interfere with the cue for the sunset fixtures, which will proceed with their long fade undisturbed.

Similarly, tracking allows multiple chases to be run at the same time without them conflicting. For example, you could plot a simple colour chase, with fixtures alternating between red and blue, and an intensity chase in which fixtures step through 0%, 50% and 100% before looping back to 0%. With tracking, these two chases can be run on the same fixtures without the chases interfering with each other. This is possible because only the colour parameters of the fixture are recorded in the colour chase, and only the intensity parameters in the intensity chase.

2.4.3 Maintain State

Sometimes you will need to play back cues out of sequence. Typically this will happen during rehearsals when you want to go back over a section of the show, but it can happen during performance if the performers make a mistake and miss out a part of the show, for example.

With some tracking consoles, the look on stage that you get after playing back cues out of sequence is incorrect. Using our example above, going from cue 1 to cue 3, missing out cue 2, would result in fixture 1 being at 100% instead of the correct 50%, and fixture 3 being at 50% instead of the correct 100%. This is because the values from cue 1 track through, without the values in cue 2 being applied.

Wholehog OS avoids this problem by Maintaining State. This means that whenever you run a cue, the console ensures that what you get on stage is what you would have got if you had run through the cuelist up to that point, regardless of where you have actually come from within the cue list. Again, using our example above, with Wholehog OS if you jump from cue 1 to cue 3 the console will calculate the state of cue 3 as if you had played cue 2 first.

2.5 Multiple Playbacks and Cuelists

Most 'theatre' consoles only use a single cuelist. Wholehog OS allows multiple cuelists, each with their own numbering sequence. You can have several cuelists active at the same time, each on its own **playback**.

On Wholehog consoles, there are ten playbacks ('masters'), each with a fader, Go, Halt/Back and Flash keys; you can add further hardware wings and use virtual masters to provide an unlimited number of simultaneous playbacks. For more information, see *Cuelist Playback (p.263)*.

Pages allow you to load preset arrangements of cuelists onto the masters; see *Working with Pages (p.303)*.

2.6 HTP and LTP

Generally, theatre desks that are not designed to handle moving lights work on a Highest Takes Precedence (HTP) basis. This means that if a fixture's intensity is being controlled by two different parts of the console, such as a playback and a submaster, the intensity will be at the highest of the two levels. For example, if in the playback fixture 1 is at 50%, and in the submaster it is at 100%, then the level seen on stage will be 100%. If the submaster is reduced to 40%, then the on-stage level will be 50%, because the level in the playback is higher and will take precedence.

This system generally works well for non-moving light consoles, but moving lights introduce a problem. Parameters other than intensity don't have 'higher' and 'lower' values: a colour of red is not higher or lower than green, and a pan of 50% is not higher or lower than one of 20%. Working with moving lights needs a new way to decide the precedence, called Latest Takes Precedence (LTP).

With this system, the fixture parameters are at the value they have been most recently assigned. In our example, moving the submaster to 40% would result in a level of 40%, because this is the latest instruction and will take precedence. The submaster would effectively 'grab' control of the parameter from the playback. Of course, running another cue in the playback might grab it back again.

Many moving light consoles use HTP for intensity and LTP for all other parameters. By default, Wholehog OS uses LTP for all parameters, but you can assign individual cuelists to use HTP for intensities (all other parameters are still LTP); see *Using HTP and LTP (p.274)*.

2.7 Individual Times for Each Parameter

With Wholehog OS you can assign individual crossfade timings for each parameter of each fixture, giving you complete control of how each parameter changes during a cue. Because of this, there are no cue parts as found on some other consoles. Wholehog OS gives you easy ways to assign timings for the whole cue, for individual fixtures and by parameter type (intensity, position, colour, beam, and so on) as well as for each parameter. For more information, see *Individual Parameter Timings (p.231)* and *Working with Fade Timings (p.226)*.

2.8 Mark Cues (Move in Black)

With Mark cues you can have the Wholehog OS automatically preset a fixture's parameters while its intensity is at zero, ready for when the fixture fades up in the next cue. This ensures that you don't get 'live moves' of parameters such as pan, tilt, colour and so on during the fade. For more information, see *Mark Cues (Move in Black) (p.223)*.

Section 3: Wholehog II Users

If you are an experienced Wholehog II user, you will find the transition to a console running the Wholehog Operating Software very straightforward. This section lists the major changes and additions with brief descriptions, while full information on each topic can be found in the *Reference (p.63)* part of this handbook.

3.1 Networking

Unlike Wholehog II, the Wholehog III console does not produce a **DMX** output directly. Instead, the console is designed to work as part of a network, linked to other devices that serve a variety of functions including generating DMX for connection to dimmers and fixtures. At its simplest, the network is a Wholehog III console connected to a DMX Processor, which produces DMX.

The Hog iPC and Road Hog consoles have four universes of DMX output built-in to the console, and the Road Hog Full Boar, Hog iPC and Hog 3PC can use DMX Processors networked to them.

A Wholehog system can consist of a more complex network with several Wholehog consoles, personal computers running Hog 3PC, and DMX Processors. For more information on networks, see *Setting Up the Network (p.75)*.

3.1.1 Multiple Consoles on the Same Show

With networking, it is possible to have several programmers, each with a Wholehog console, working on the same show file. Since both programmers are working on the same show, it is a simple matter for a single operator to take over the running of the show once programming is complete. For more information on using multiple consoles, see *Connecting Multiple Consoles (p.81)*.

3.1.2 Multiple Shows on the Network

Similarly, networking allows several shows to be run on the same network. A theme park, for example, might have several rides, stages and other lighting areas, which need to be run as separate shows. Each show could have an operator with a console, while a 'master' operator controls all shows, perhaps in order to make changes to the programming. For more information on using multiple shows on one network, see *More than One Show on the Network (p.82)*.

3.2 The Front Panel

The front panel of the Wholehog III looks relatively unchanged from the Wholehog II, but it incorporates many improvements. The rear part of the panel with the touch screens can be tilted up to present the screens at a more convenient angle, while in response to user feedback the wrist rest has been made softer and more comfortable.

3.2.1 Faders

The number of masters has been increased from eight to ten, while the Grand Master and Cross Fade Master have been removed. Any master can now act as a Grand Master. For more detailed information, see *Working with Playback Controls (p.311)*.

3.2.2 Trackball

The Trackball has been added to give easy control over pan and tilt, and to control the on-screen cursor. This is especially useful with the Wholehog III's enhanced spreadsheet-style features.

3.2.3 Vertical Wheels

In addition to the parameter wheels used by the Wholehog II, the Wholehog III features two vertically mounted wheels. The one on the right-hand side of the console is the I-Wheel and is used for controlling the intensity of fixtures. The Rate Wheel on the left-hand end is sprung, and is typically used for overriding the crossfade speed of a cue, or the rate of an effect or chase.

3.2.4 New Keys

Some functions that on Wholehog II required a combination of key presses have been given their own dedicated buttons, such as Fan, Merge, Fixture, Intensity and Back. See *New and Streamlined Functions (p.19)*.

Additional buttons have also been provided along the top and bottom edges of the touch screens. These Soft Keys replicate the on-screen toolbar buttons located immediately above or below the Soft Keys.

3.2.5 Touch Screens

The two touch screens are larger, are in colour, and have better brightness and contrast characteristics. For more information, see *Using the Touch Screens (p.97)*.

3.3 New Playback Features

The new playback features include:

- **Ten Fully Customisable Playbacks:** The functions of all associated keys and faders can be customised.
- **Scene Masters:** Scenes, which are single cues that are not associated with a cuelist, can be loaded onto any of the masters and controlled by the fader and keys.
- **Inhibitive Masters:** Groups can be loaded onto masters, and their maximum intensity controlled by the fader.

3.4 The Effects Engine

The new features of the Effects Engine include:

- **Palettes:** Effects can be recorded into embeddable palettes, so that they update throughout the show when the original palette is modified.
- **Effects Morphing:** Effects can morph from one to the next. For example, with a circle at one speed in cue 1 and a circle at another speed in cue 2, on the crossfade the circle will speed up, rather than the first circle stopping and the next one fading in.
- **Effect Length:** You can now specify over what proportion of the effect period the effect occurs.

3.5 Abstraction

A key philosophy behind Wholehog OS is that as a user you shouldn't have to worry about the technicalities of the way that a particular manufacturer implements a particular feature on a fixture. As far as you are concerned the fixture has common parameters such as intensity, position, colour and beam, and it is these parameters that you control with the console. You no longer have to think in terms of **DMX addresses** and values.

This is called the 'abstraction layer' because the software acts as a layer between you the user and the lighting hardware, converting 'abstract' ideas of intensity, colour, and so on into the specific instructions that the fixtures need, defined by their DMX protocol.

3.5.1 Real World Units

Fixture parameters are described as far as possible in real world units such as degrees for rotation and beats per minute for the speed of a chase. Colour can be described in terms of a single colour model for all fixtures (cyan-magenta-yellow or hue-and-saturation, for example) irrespective of the technical details of how the fixture creates a particular colour; see *Colour Matching (p.16)*. This speeds up programming and allows fixtures of different types to be selected and adjusted at the same time: for example, you can assign several fixtures of different types to all strobe at 10 Hz without having to worry about the different DMX values required by each fixture to achieve this. Wholehog OS will give you the best possible match between fixtures; the only limitations are those of the fixtures themselves.

3.5.2 Parameters

Some fixtures put more than one parameter onto a single DMX address. For example, a fixture might use DMX values in the range 0-127 for intensity, 128-250 for strobe, and 251-255 for fixture reset. With the Wholehog II, the three functions of intensity, strobe and reset would all be controlled as a single parameter, and you would have to remember that if you accidentally turned the parameter wheel too far when adjusting the strobe speed, you could give the parameter a value above 250 and send the fixture into reset.

Wholehog OS separates such functions into independent parameters, so that you do not need to remember the detailed workings of a particular fixture; in the example given above, the intensity, strobe and reset functions all appear as separate parameters, so there is no possibility of going from strobe into reset. With parameters that share a DMX address, changing the value of one will override the value of all the others, since there can only be one DMX value. In the case of our example, assigning a strobe speed will override any intensity value; the console will show a ~ in place of the intensity value to indicate that this has happened.

3.5.3 Interchangeable Fixtures

You can replace a fixture already programmed into a show by one of a different type, and Wholehog OS will as far as possible convert the programmed data to apply to the new fixture type. If the new fixture has more limited capabilities than the old one, this is handled as gracefully as possible. For more on replacing fixtures, see *Changing the Fixture Type (p.135)*.

3.6 Colour Matching

Fixtures of different types use different methods to perform colour mixing. Sending the same parameter values to fixtures of different types might produce a different colour on each type. For example, sending C=50%, M=50%, Y=0% will always produce a shade of blue, but it'll be a different blue with different fixture types.

Usually, you have to compensate for this yourself by manually creating colour palettes by eye to produce similar colours on all fixture types. This is a time consuming process, and later restricts you to using the palettes you have already set up.

The Wholehog OS's colour matching system provides a new way to choose colours, without these problems.

3.6.1 Colour Models

Traditionally, colour mixing fixtures use the CMY (Cyan, Magenta, Yellow) system to uniquely define each colour they can produce. With the increasing popularity of LED fixtures, the RGB (Red, Green, Blue) system is also becoming more common. These two systems are called 'colour models'. Any colour can be represented equally well by either of these two colour models - they are just different ways of conveying the same information. Many other colour models exist, perhaps the most useful of which (for lighting control, anyway) is the HSI (Hue, Saturation, Intensity) system:

Hue: This is the term used to specify the colours position in the possible range a colours, from red, going through yellow, green, cyan, blue and magenta, and finally returning to red. As the range 'wraps around', you can visualise it as a circle with the colours positioned around the edge, with red at the top, green at the lower right, blue at the lower left, and the intermediate colours in between. The angle between 0 and 360 degrees specifies the hue of the colour: red has a hue of 0 degrees, yellow has a hue of 60 degrees, and cyan has a hue of 180 degrees; see *Figure 3.1, "The HSI Colour Wheel"*.

Saturation: This is how 'strong' or 'pale' the colour is. Pale colours have low saturations, while strong colours have high saturations. Saturation is specified as a percentage between 0% (white) and 100% (the strongest possible saturation).

Intensity: This is simply a measure of how much light is being emitted, from 0% (black) to 100% (the brightest possible). This is identical to the dimmer control on most fixtures.

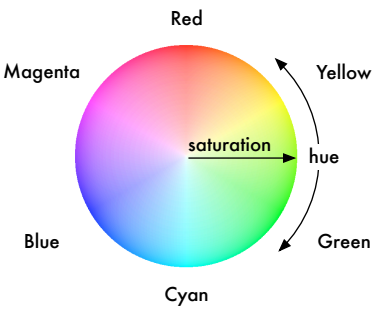


Figure 3.1. The HSI Colour Wheel

With these three pieces of information (hue, saturation and intensity), every possible colour can be represented. As most fixtures already feature a dimmer to control the intensity, it is only necessary to specify the Hue and Saturation to uniquely represent any colour.

The Hue and Saturation of White Light

White is defined as the colour with 0% saturation; the hue doesn't matter. However, while tungsten and arc lamps both produce 'white' light, when you compare them side to side their colours are considerably different. The tungsten lamp has a 'warmer' colour with a higher red and yellow content, while arc lamps usually have a 'cooler' light with more blue in it. One version of white is not more 'correct' than the other, so either may be chosen to be the reference point depending on the situation. In a theatrical environment where tungsten sources are more common tungsten white is likely to be most appropriate base. In other environments predominantly using arc sources, it will be more convenient to use arc white; for information on changing the white point, see *Using Colour Matching (p.167)*.

3.6.2 The Colour Matching System

The Wholehog OS's colour matching system is based on a fixture library that contains colour calibration data for the fixture types in use. This calibration ensures that fixtures of different types can easily be assigned to the same colour, including to a chosen definition of 'white'. It can also be used for fixtures that have not been calibrated, but the colours that will be produced may not match the colours from fixtures that do have calibration data.

You can choose colours using the parameter wheels to assign cyan, magenta and yellow values or hue and saturation values, or you can use the on-screen visual colour picker; see *The Colour Picker (p.167)*.

It is preferable to program using Hue and Saturation whenever possible. The advantages are:

- Selecting colours using Hue and Saturation or the colour picker will produce the same visual colour output on all calibrated fixture types.
- You can use fanning and effects on Hue and Saturation to produce attractive looks quickly.
- When you use Hue and Saturation to pick a colour, Wholehog OS will automatically use the best possible DMX value settings for each fixture type to achieve maximum light output from each fixture.
- You can crossfade from a saturated red to a saturated green without the saturation changing. The crossfade will work through all the saturated colours between red and green, rather than taking an unexpected path to get there, as can happen when using CMY programming.
- Crossfades between colours recorded using Hue and Saturation will remain matched on all fixtures through the progress of the crossfade. This produces a better, more even-looking colour crossfade.

Tip

It is strongly recommended that you do not change between the HSI and CMY systems within a show.

3.7 New and Streamlined Functions

Wholehog OS simplifies, clarifies and streamlines some Wholehog II functions. This table shows the main changes:

Wholehog II Function	Wholehog OS Function
Load	Use Open to open an object (cue, palette, etc.) and edit it directly.
Clone	Use Copy to copy settings between fixtures, as well as copying whole objects.
Extract	Use Copy to copy settings into the Programmer.
Active	Use Live to make selections based on the look on stage. Use Touch to assign hard values corresponding to what is currently on stage. Use Suck to capture the look that is currently on stage.

Part T. Tutorial

The Tutorial guides you through the main operations of setting up the console, and programming and running a show. If you want a detailed description of how to work with particular functions, use the *Reference (p.63)*.

The Tutorial is in two parts: the Quick & Dirty tutorial shows you how to create a very simple show in Ten steps, while the main tutorial gives you a more detailed introduction to the Wholehog III.

Section 4: Quick & Dirty - A Show in Ten Steps

OK, you've got your hands on a console or PC running Wholehog OS, and you want to see it working *right now*. You need the Quick and Dirty tutorial.

4.1 Step 1: Connecting the Mains

Use the IEC cables supplied to connect the console and the DMX Processor to any voltage between 100 and 240V AC.

4.2 Step 2: Connecting the DMX Processor

Connect the DMX Processor directly to your console with a standard Category 5 **Ethernet cross-over** cable (supplied).

4.3 Step 3: Starting the Console

Switch on the power to the console and the DMX Processor. Once the console has started up, the Start window will appear.

4.4 Step 4: Starting a New Show

Select Launch New Show. You will be prompted for:

- A Storage Location. Choose the location that the console suggests.
- A name for your show. Press the Set key to bring up an on-screen keyboard to enter text.
- A **Fixture Library**. This contains fixture personality information. Choose the one the console suggests and select Finish.

Wholehog OS will launch a new show.

4.5 Step 5: Adding the Fixtures

Choose the **fixtures** you want in your show. To add Fixtures:

1. Setup → Patch → Fixture Schedule : open the Fixture Schedule window.
2. Choose a manufacturer, and click on the ⊞ button to expand the list and see individual fixture types.
3. Select the fixture's Quantity cell and press Set.
4. Enter the number of fixtures, and press Enter.
5. Repeat for all the fixture types you want.
6. When you have finished, click OK to apply changes and close the window.

4.6 Step 6: Patching the Fixtures

For each fixture:

- Fixture, (Fixture Type from Toolbar), **[Fixture Number]** @ **[Patch Address]**, Enter

For Example:

- Fixture, (Studio Color 575), **1** @ **1**, Enter : after pressing Fixture, the Fixture Types Toolbar appears, from which you can choose the required fixture type.

When patching, the Fixture Patch window will appear. Use this to determine the next free **DMX address**, and to see how full the **DMX universes** are.

To Patch to a universe greater than 1:

- Fixture, (Fixture Type from Toolbar), **[Fixture Number]** @ **[Universe Number]** / **[Patch Address]**, Enter

For Example:

- Fixture, (Studio Color 575), **1** @ **2** / **1**, Enter

Repeat as necessary, when all fixtures are patched close the Fixture window.

4.7 Step 7: Assigning Values to Parameters

Fixtures and their parameters are assigned values in the Programmer, opened by pressing Programmer in the Main Toolbar.

First, assign the intensity of your fixture. For example:

- Fixture (Studio Color 575) **1** @ **60**, Enter : assigns the intensity of Studio Color 1 to 60%.

When you press the Fixture key, the Fixture Types Toolbar will appear. Use this to select Studio Color 575 in this example.

You can also adjust the intensity with the I-Wheel on the right of the console:

- Fixture (Studio Color 575) **1**, Enter : select the fixture, then move the I-Wheel.

Now assign the other parameters:

Pan and Tilt: With the fixture still selected, change the Trackball to pan and tilt mode by pressing the top right Trackball button. The Trackball will glow blue, and you can use it to assign the pan and tilt of the fixture. When you have finished, press the top right button again to change the Trackball back to controlling the on-screen pointer.

Colour: Press the Colour key, and you adjust the fixture's hue and saturation with the parameter wheels. Press Colour again to mix using cyan, magenta, and yellow. You can also choose specific colour **slots** from the Slot Toolbar on the touch screen.

Beam: Press the Beam key. You can now assign beam focus, frost and so on using the parameter wheels. You can select beam slots such as gobos from the Slot Toolbar.

4.8 Step 8: Recording the Cue

Once you have assigned values to some fixtures, record a cue to a specific **master** for playback:

- Press Record, then the Choose key above one of the masters.

The first time you record a cue onto a master, Wholehog OS will create a new Cuelist on that master, and record the cue as Cue 1. If you record more cues into the same cuelist, Wholehog OS will give each the next free cue number.

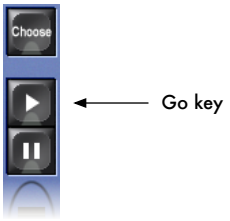
Tip

By default, the Grand Master is on Master 1, so it is best to use a different master for your cuelist. If you accidentally load a cuelist onto Master 1, you

can recover the Grand Master by moving the cuelist to another master; see *Moving Cuelists, Scenes and Inhibitive Masters to a Page (p.308)*.

4.9 Step 9: Playing Back the Cue

1. Check that the Fader of the Grand Master (by default it is on Master 1) and the master that you put your cuelist on are at full.
2. Clear the Programmer to ensure its output does not interfere with your look on stage by pressing Clear.
3. Press Go on the master you recorded your cues on:



4.10 Step 10: Changing the Cue Time

Wholehog OS gives cues a default time of 2 seconds when they are first recorded. To change the cue time:

- Cue **1** Time **6**, Enter

You can now carry on to the full tutorial in the next section, or just start using the console and use the Reference (p.63) to answer your questions as you go.

Section 5: Tutorial Overview

5.1 Introduction

The following sections introduce you to the basic functions of Wholehog OS by worked example, introducing its layout; showing you how to create new shows; connect **fixtures**, create **groups** and **palettes**; then programme **cues**, **chases** and **effects**. Experienced Wholehog II users may bypass this section, firstly referring to *Wholehog II Users (p.13)* and then to *Reference (p.63)* when needed.

The Tutorial rig consists of:

1 x Wholehog OS console.

5 x Studio Spot 575 on the back truss

10 x Studio Color 575M on the front truss

8 x Technobeam Iris on the back truss

16 x **Desk Channels**, with 8 x Source 4 Parnels on each circular truss screen

5.2 Using Visualisation Software

You can use visualisation software such as ESP Vision, WYSIWYG, MSD, and Capture to work through the examples in the tutorial. The software allows you to directly see the effects of your actions without hanging any fixtures. In fact you don't need to hang any virtual fixtures, since visualiser files with the rig used in all training and examples in this section can be downloaded from the Flying Pig Systems website at *www.flying-pig.com*. For information on configuring Wholehog OS to work with visualisers, see *Visualiser Connectivity (p.367)*.

Section 6: Setting Up the Console

Wholehog lighting systems can be quite complex, with multiple consoles, DMX Processors and other devices networked together. This tutorial uses a basic system of one Wholehog OS console using a DMX Processor. PC based consoles do not require a DMX Processor for output.

6.1 Connecting and Turning On the System

1. Connect the DMX Processor using a Category 5 **cross-over cable**, supplied with the console. An ordinary (non-crossover) cable won't work.
2. If you wish, connect an external keyboard, mouse, and displays. Adding a mouse frees up the console's Trackball for positioning fixtures.
3. Connect the DMX Processor and the Wholehog console to mains power, and turn on. You can connect the console to any mains supply between 100 and 240V AC.

After a few moments the Wholehog OS Startup window will appear:

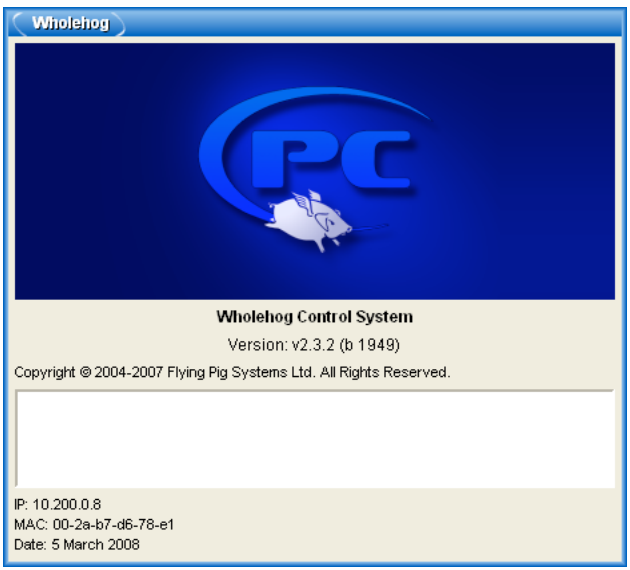


Figure 6.1. The Startup Screen

The DMX Processor's LCD screen shows Connecting - No Server. Once a you have loaded a show, the screen will display Idle - Show Server: 127.0.0.1@6600. The LCD screen will

remain like this until you have patched fixtures and DMX is being outputted, when the DMX Processor's status will change to Running.

Figure 6.2. DMX Processor Screens

6.2 Calibrating Screens and Setting Up Peripherals

When you first use the console, or reload its software it is a good idea to recalibrate the touch screens ensuring that on-screen buttons can precisely selected using fingertips.

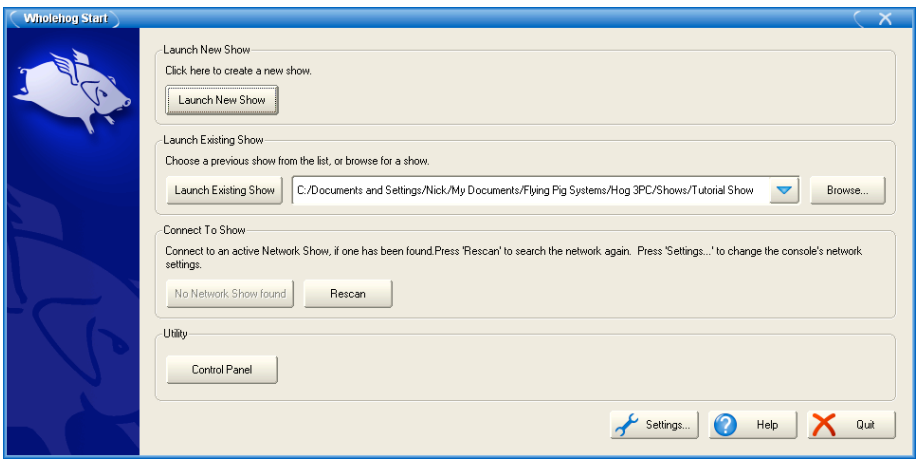

Wholehog Start
Launch New Show
Click here to create a new show.
Launch New Show
Launch Existing Show
Choose a previous show from the list, or browse for a show.
Launch Existing Show
C:/Documents and Settings/Nick/My Documents/Flying Pig Systems/Hog 3PC/Shows/Tutorial Show
Browse...
Connect To Show
Connect to an active Network Show, if one has been found.Press 'Rescan' to search the network again. Press 'Settings...' to change the console's network settings.
No Network Show found
Rescan
Utility
Control Panel
Settings...
Help
Quit

Figure 6.3. The Start Window

6.2.1 Touchscreens

1. Once the console is switched on, the Start window will appear (see *Figure 6.3, "The Start Window"*). Press the Touchscreens button.
2. A target will appear sequentially in each corner, which you should touch in turn; see *Figure 6.4, "The Calibration Screen"*. The calibration is complete when you have done all four corners, press Enter to finish.

You can press the Set key to start the process again if necessary.

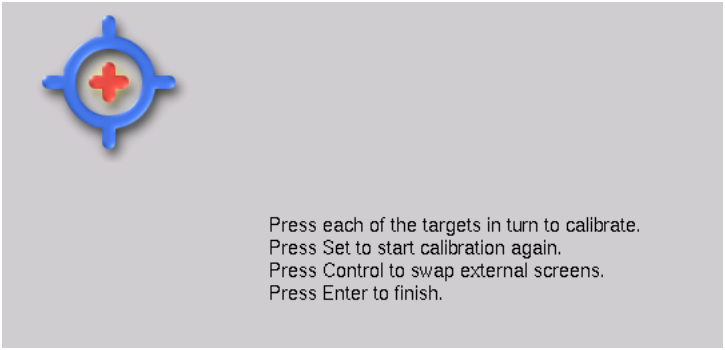

Press each of the targets in turn to calibrate.
Press Set to start calibration again.
Press Control to swap external screens.
Press Enter to finish.

Figure 6.4. The Calibration Screen

6.2.2 External Displays

If you have connected external displays to supplement the console's touch screens, you will need to enable them and set their screen resolution:

1. Control Panel → Displays : open the Control Panel and select the Displays pane.
2. Enable the displays you want to use with the Enabled buttons.
3. Select a resolution for the displays from the drop-down menu; see *Figure 6.5, "The Displays Pane of the Control Panel"*.
4. OK : close the Control Panel.
5. For the display settings to take effect, you need to restart the console. Press Quit in the Start window. When the console says that it is safe to turn it off, switch off and back on again using the power switch on the rear of the console.

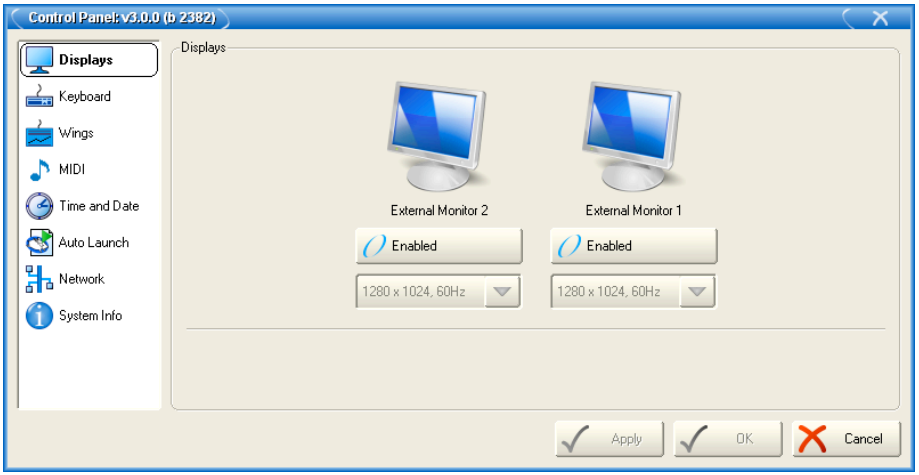


Figure 6.5. The Displays Pane of the Control Panel

6.2.3 External Keyboard

Finally, if you have connected an external keyboard, you may need to configure it:

1. Control Panel → Keyboard : open the Control Panel and select the Keyboard pane.
2. Choose a keyboard model and layout in the Keyboard pane; see *Figure 6.6, "The Keyboard Pane of the Control Panel"*.
3. Click or press on OK.

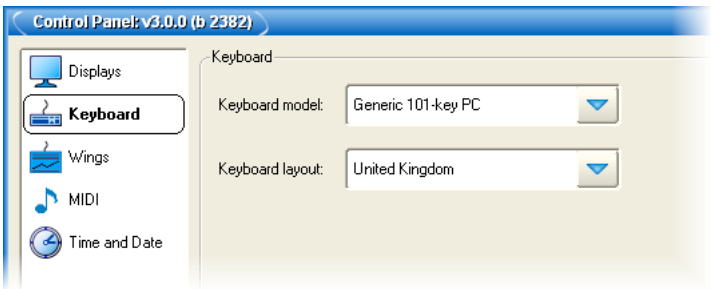


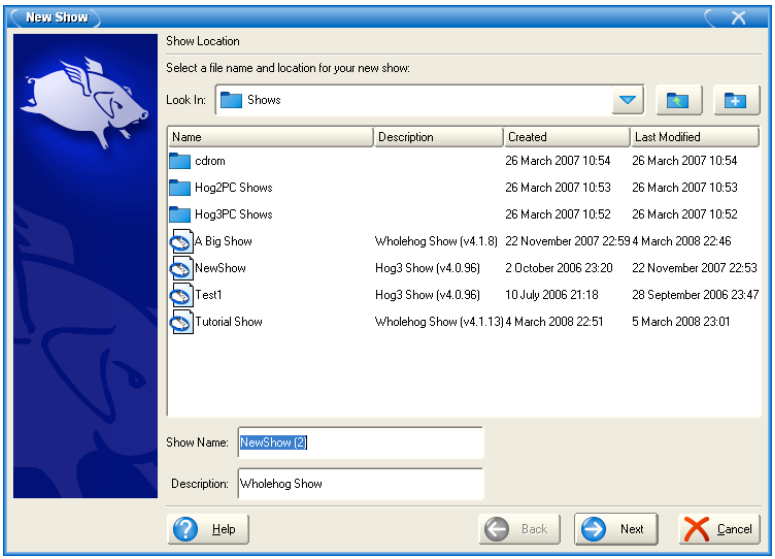
Figure 6.6. The Keyboard Pane of the Control Panel

6.3 Launching A New Show

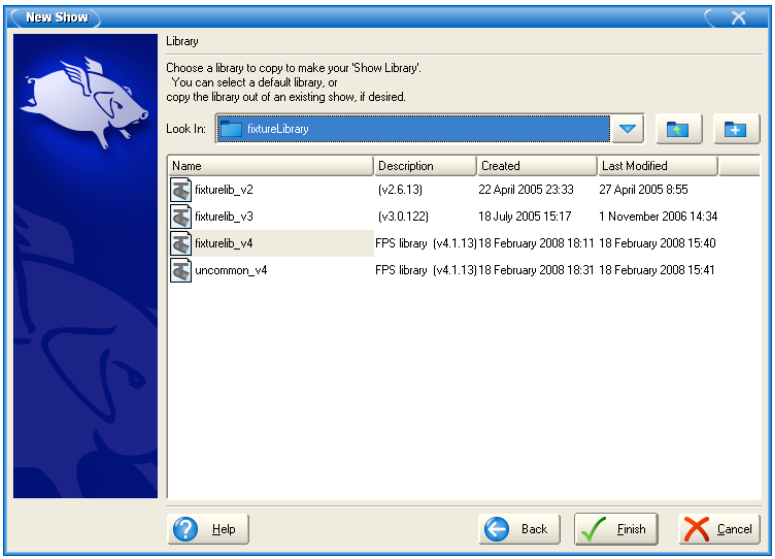
The Wholehog OS Start window (see *Figure 6.3, "The Start Window"*) gives you the option to Launch New Show, as well as launch existing shows or join one currently running over a network.

For now, create and launch a new show, following the on-screen instructions as the console guides you through the process:

1. Select the Launch New Show option. The Show Location screen will allow you to name your new show and select a location for the show:



2. Select a library to use for your show. You can use the standard library in the fixture library folder or choose a library from an existing show:



It is best to select the most recent (highest version number) library. The 'uncommon' library contains rarely used fixture types and should not be used to start new shows.

3. Select Finish. The console will launch a new show.

6.4 Find Out More

For more information, see the *Reference (p.63)* section of the manual:
For: Power, peripherals and hardware set-up
See: *Setting Up the Console (p.65)*
For: Networking
See: *Setting Up the Network (p.75)*
For: DMX Processors
See: *Working with Network Processors (p.83)*
For: Launching the show
See: *Starting Up (p.117)*

6.5 If You Get Stuck

1. **The DMX Processor and the console don't appear to be communicating.**

   See *The console isn't talking to the DMX Processors (p.411)*.

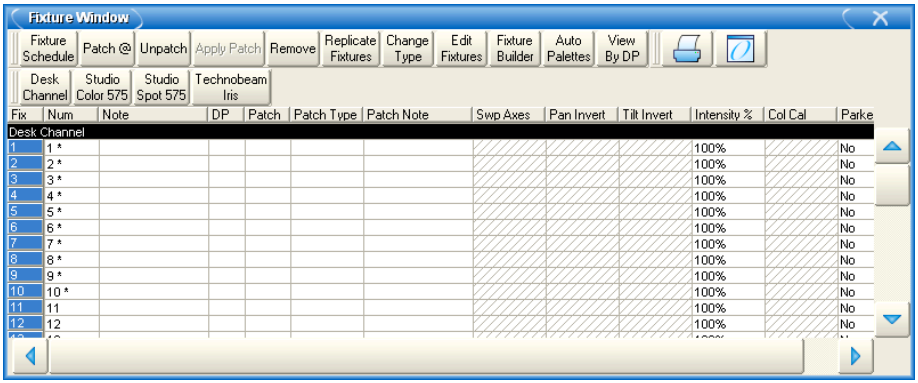
Tip

More troubleshooting advice, and information on getting help from Flying Pig Systems, can be found in *Getting Help (p.411)*.

Section 7: Setting Up the Show

7.1 Adding the Fixtures

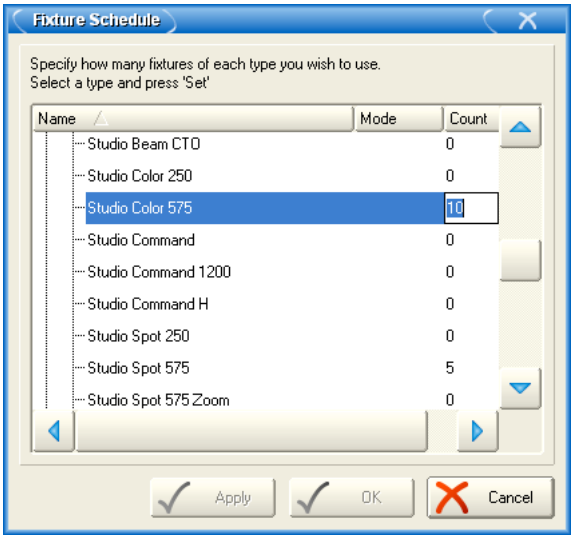
Before starting programming you need to choose the fixtures you wish to use in the show and patch them within the Fixture window:



To open the Fixture window:

- Setup → Patch : press the Setup key on the console to show the Setup Toolbar, then press Patch.

To add new fixtures, open the Fixture Schedule window by pressing the Fixture Schedule button in the top left-hand corner of the Fixture window:



Use the trackball, mouse or cursor keys (below the trackball) to navigate the list of manufactures. With the cursor keys, use up and down to scroll, and right and left to toggle open and closed each manufacture's list.

1. Scroll to High End, and toggle the list open by clicking on the ⊞ icon, or using the right cursor key.
2. Select Studio Color 575, press Set, type **10** and Enter.
3. Repeat for 5 Studio Spot 575s.
4. Repeat for 8 Technobeam Iris.

Tip

If you have an external keyboard attached to the console, you can press H to jump to High End, and so on.

To add the Desk Channels:

1. Scroll to the Generic list and toggle open.
2. Select Desk Channel. Press Set, type **16** and Enter.
3. When you have finished, select OK to apply and close the window.

Tip

Desk channels are conventional intensity-only fixtures such as parcans.

7.2 Patching the Fixtures

You now need to assign a **DMX address** to each fixture that you entered into the schedule. The following patch uses the same DMX addresses as the visualiser tutorial show files obtainable from the Flying Pig Systems website. All the fixtures in the tutorial rig can be connected to a single **DMX universe**.

To patch fixtures, make sure that the Fixture window is open (Setup → Patch). First, patch the Studio Color 575s:

1. Fixture, (Studio Color 575), **1** Thru **10** : select the fixtures to patch. The Fixture key is on the console, and the fixture types are on the Fixture Types Toolbar on the right hand touch screen.
2. Patch@ : the Fixture Patch window will open. The Patch@ button is at the top of the Fixture window.
3. In the Fixture Patch window, check that DMX Processor 1 is highlighted, and its first Universe is selected; *Figure 7.1, "The Fixture Patch Window"*.
4. **1**, Enter : patches Studio Colors 1 through 10 to DMX addresses 1 to 160 consecutively.

Tip

You can use the @ key on the console as a short-cut for the Patch@ button in the Fixture window.

Patch the remaining fixtures in the same way:

1. Fixture, (Technobeam Iris) **1** Thru **8** @ **161**, Enter : patches Technobeams 1 through 8 to DMX addresses 161 to 304 consecutively.
2. Fixture, (Studio Spot 575) **1** Thru **5** @ **305**, Enter : patches Studio Spots 1 through 5 to DMX addresses 305 to 424 consecutively.
3. Fixture, (Desk Channel) **1** Thru **16** @ **425**, Enter : patches Desk Channels 1 thru 16 to DMX addresses 425 to 441 consecutively.

Once you have patched all the fixtures, press Apply Patch or close the Fixture window to send the patch information to the DMX Processor. *Figure 7.2, "The Fixture Window, showing patching"* shows the completed patch.

7.3 Assigning User Numbers

A User Number is a number you use to select a particular fixture when programming. By default, Wholehog OS gives each fixture type its own range of numbers, so there may be several fixtures numbered 1, distinguished by selecting the fixture type before

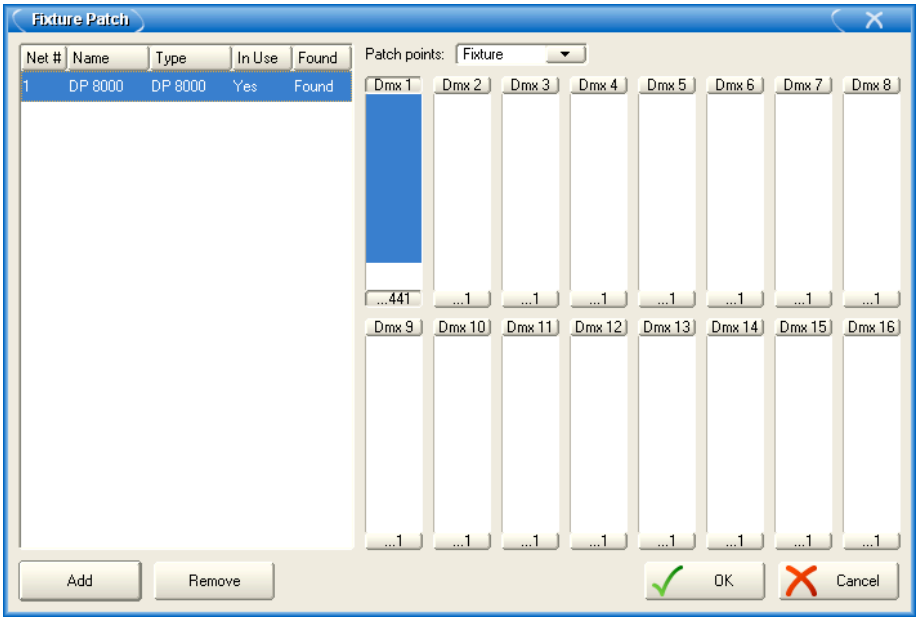


Figure 7.1. The Fixture Patch Window

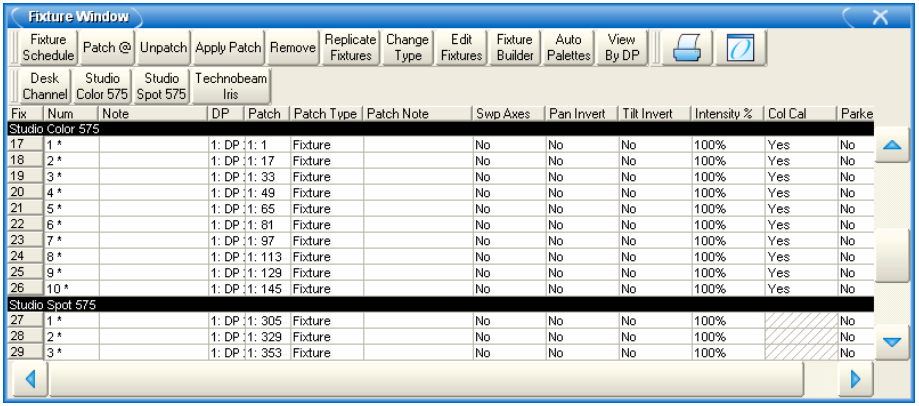


Figure 7.2. The Fixture Window, showing patching

entering a number when selecting fixtures. You can speed up programming by renumbering the User Numbers into a non-repetitive single series, so that you don't have to keep re-selecting fixture types.

To Change the User Number:

1. Setup → Patch : open the Fixture window.

2. Select the fixture's Num cell (short for User Number) by clicking on it with the trackball or mouse.
3. Press Set, type in the new number, and press Enter.

To change several User Numbers at once:

1. Setup → Patch
2. Select a range of Num cells by clicking and dragging.
3. Press Set, type in the new number, and press Enter : the fixtures' User Numbers will be assigned starting from the number you entered.

If you wish to use user numbers for the tutorial they should be assigned as follows:

Fixtures	User Numbers
Studio Colors 1-10	1-10
Studio Spots 1-5	11-15
Technobeams 1-8	21-28
Desk Channels 1-16	31-46

Note that throughout this manual, it is assumed that you have assigned user numbers so that they are unique, so you don't have to specify the fixture type.

7.4 Automatically creating Palettes and Groups

Groups are predefined selections of fixtures, while palettes are predefined parameter settings. Together, they speed up programming by allowing you to create states from "building blocks" of light.

Creating your own groups and palettes is described in *Creating and Using Groups (p.45)* and *Creating and Using Palettes (p.49)*, but to get you started Wholehog OS can create an initial set of groups and palettes automatically. The Auto Palettes function located at the top of the Fixture window automatically creates commonly needed colour and beam palettes, and common groups such as All, Odd, Even, and so on, based on the fixtures in the show:

1. Setup → Patch, Auto Palettes : the Auto Palettes window opens, giving a range of options; see *Figure 7.3, "The Auto Palettes Window"*.
2. Select Generate.
3. Close the Fixture window.

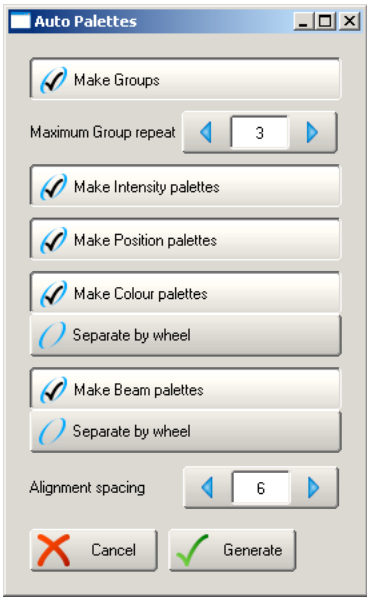


Figure 7.3. The Auto Palettes Window

The Auto Palettes function has a number of advanced options described in *Creating Palettes and Groups Automatically (p.136)*.

7.5 Find Out More

For more information, see the *Reference (p.63)* section of the manual:
For: Adding and Patching Fixtures
See: *Adding a Fixture to the Show (p.133)*, *Patching Fixtures (p.138)*
For: Configuring Fixtures
See: *Configuring Fixtures (p.147)*
For: User Numbers
See: *Modifying the User Number (p.148)*
For: Groups
See: *Working with Groups (p.181)*
For: Palettes
See: *Working with Palettes (p.187)*

Section 8: Programming Fixtures

Once you have patched the fixtures, you can start building your show. Despite the ease with which you can programme on Wholehog OS, it is advisable to plan your show beforehand, creating building blocks to speed the actual recording of cues. Remember that there are many more parameters to process than just lamp intensity when tackling a moving light rig. Careful creation of palettes and groups will give your plot structure and enable you build up complex layers and looks not otherwise possible.

All fixture manipulation takes place in editor windows, see *Working with Editors (p.112)*. There are editors for cues, palettes, and so on, but you will do your initial programming in the Programmer; see *Figure 8.1, "The Programmer Window"*.

Open the Programmer window by selecting Programmer from the Main Toolbar.

The console allows you to have several editors open at once, for example to edit a cue that you recorded previously while also working in the Programmer. To ensure that your commands go to the correct editor, select Edit in the top of the editor window you want to work in.

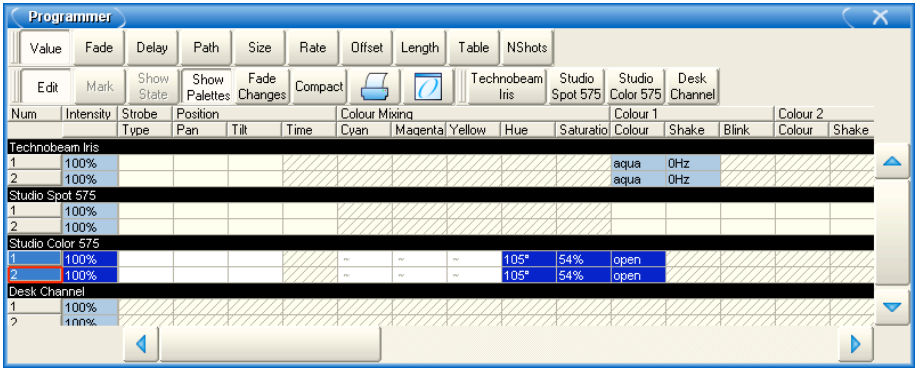


Figure 8.1. The Programmer Window

8.1 Selecting Fixtures

The process of selecting fixtures is used in creating all groups, palettes, cues and scenes. There are several ways to select fixtures; the main ones are described here.

8.1.1 Selecting Individual Fixtures

You can select a fixture using a command line:

- Fixture (Studio Color 575) **1**, Enter

The Command Line Toolbar is shown in *Figure 8.2, "The Command Line"*.

Figure 8.2. The Command Line

When you press the Fixture key, the Fixture Types Toolbar will appear with all the fixture types in the show for you to select from; Studio Color in the example above. See *Figure 8.3, "The Fixture Types Toolbar"*.

Figure 8.3. The Fixture Types Toolbar

Alternatively, you can cycle through the fixture types by repeatedly pressing the Fixture key.

The Programmer will remember the last fixture type that you selected, which means you only need to press Fixture and choose a type when you wish to use a different fixture type. So:

- **2**, Enter : selects Studio Color 575 2 within the Programmer.

With User Numbers

If you have assigned your user numbers as a non-repetitive single sequence, simply type the fixture's user number irrespective of type:

- **1**, Enter : selects Studio Color 1 within the Programmer.
- **21**, Enter : selects Technobeam 1 within the Programmer.

8.1.2 Selecting Multiple Fixtures

First clear the previous selection by pressing the Clear key.

You can select more than one fixture using the +, – and Thru keys:

- Fixture **1** + **5**, Enter : selects Fixtures 1 and 5.
- Fixture **1** Thru **5**, Enter : selects Fixtures 1 through 5.
- Fixture **1** Thru **5** – **3**, Enter : selects Fixtures 1 through 5 except 3.

You can also select more than one fixture type at once. If you haven't assigned unique user numbers, you will need to specify the fixture type:

- Fixture (Studio Color 575) **1** Fixture (Studio Spot 575) **2**, Enter.

Or, with unique user numbers:

- Fixture **1** + **12**, Enter : selects Studio Color 575 1 and Studio Spot 575 2.

8.1.3 Deselecting and Removing Fixtures from Programmer

Once you make a new selection, previously selected fixtures will remain in the Programmer and are indicated by changing the text colour to pale blue. To make further changes, re-select them, or click on the fixture's number in the Num column of the Programmer window.

You can clear specific fixtures by knocking them out of the Programmer:

- (Studio Color) **1** Thru **10** Knockout

You can clear all fixtures in the Programmer by pressing the Clear key. Note that knocking out fixtures or clearing the Programmer will clear any parameter values that you have assigned. Pressing the Undo key will restore the cleared values, however.

8.2 Creating and Using Groups

Groups are shortcuts for selecting several fixtures at once. They can be recalled from the Group Directory (see *Figure 8.4, "The Group Directory"*) that you open by pressing Open + Group. Whilst the Autopalettes function will create groups such as All Studio Color 575, Odd Technobeam Iris and Even Studio Spot 575, it can be helpful to create show-specific ones. For the tutorial show, you should make groups for:

- All Technobeams and Studio Spots on Rear Truss
- Technobeams 1-3 Keyboards Specials Group
- Technobeams 4-5 Drum Riser Specials Group
- Technobeams 6-8 Guitar Specials Group
- Studio Spots 1+5 Vocals Specials Group
- Inner Studio Colors 3-8
- Outer Studio Colors 1+2+9+10
- All Screen desk channels

To record a group:

1. Fixture **1** Thru **3** : select the desired fixtures in the Programmer.
2. Record, Group : the Group Directory window opens.
3. Select a location in the Group Directory window by pressing the on-screen button; see *Figure 8.4, "The Group Directory"*.

   Alternatively, enter a number for the group on the keypad and press Enter.

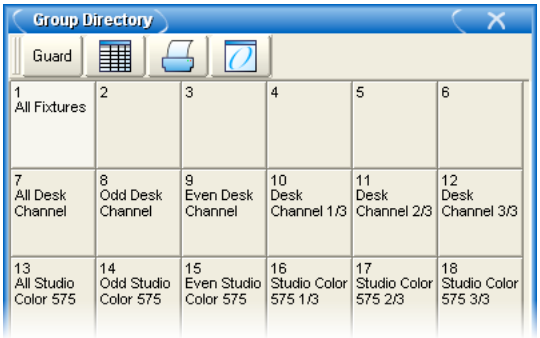


Figure 8.4. The Group Directory

Tip

You can name your group by pressing Set directly after recording it, or later by pressing Set together with the group you wish to name in the Group Directory window.

To use groups to select fixtures during programming, use the Group key on the console or the buttons in the Group directory window:

- Group **1** Enter : selects group 1 into the Programmer.

Or:

- (All Studio Color 575) Enter : selects the group All Studio Color 575 into the Programmer.

8.3 Assigning Values to Parameters

Fixture parameters are accessed through the parameter type keys: Intensity, Position, Colour and Beam. When you select a fixture, its intensity can be directly assigned by using the I-Wheel on the right of the console, and position (pan and tilt) can be assigned by using the Trackball (when in position mode).

8.3.1 Assigning Intensity

As well as using the I-Wheel, you can assign intensity with the @ key and numeric keypad:

- Fixture **1** @ **5**, Enter : assigns Fixture 1 to 50%.
- Fixture **1** @ **70**, Enter : assigns Fixture 1 to 70%.

- Fixture **1** @ **05**, Enter : assigns Fixture 1 to 5%.

There are also quick ways to assign fixtures to full or zero:

- Fixture **1** Full : assigns Fixture 1 to full.
- Fixture **1** Out : assigns Fixture 1 to zero. The Out button is on the Main Toolbar at the bottom of the right-hand screen.

8.3.2 Assigning Position

Position can be assigned using the Trackball in position mode, or by using the parameter wheels. To put the Trackball into position mode, toggle the adjacent top right trackball key; the Trackball will glow blue. Alternatively, press the Position key and you can control the pan and tilt movements of the fixture on the parameter wheels. This can be useful for adjusting pan and tilt separately.

Tip

Pressing the bottom right trackball key puts the Trackball into Ortho mode. Pan and tilt will be adjusted independently as you move the Trackball to give fine control of one without disturbing the other.

8.3.3 Assigning Colour and Beam

There are two ways to assign colour and beam parameters depending on the fixture type. Some continuous parameters, such as colour mixing, are controlled by the parameter wheels. Some parameters, such as gobo and fixed colour wheels, are in discrete steps (known as 'slotted'). These are controlled by the Slot Toolbar on the right-hand touch screen. The functions available on the Slot Toolbar will vary according to the selected fixtures; see *Figure 8.5, "The Slot Toolbar for a Studio Color 575"* and *Figure 8.6, "The Slot Toolbar for a Studio Spot 575"*.

Figure 8.5. The Slot Toolbar for a Studio Color 575

Figure 8.6. The Slot Toolbar for a Studio Spot 575

Assigning Continuous Colour and Beam Parameters

To assign continuous colour or beam parameters:

1. Select the required fixtures.
2. Select either colour or beam using the parameter type keys located below the parameter wheels. Legends will appear above the parameter

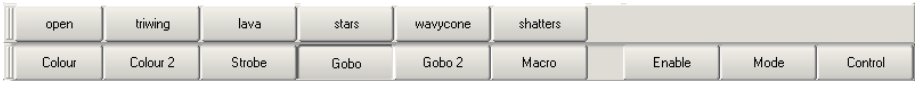
wheels. If there are more parameters than parameter wheels, you can page through these by pressing the parameter type key again.

3. Assign the parameters using the parameter wheel. Some parameters of some fixtures have several modes; for example, the gobo wheels of the Studio Spot 575 can be in Slots, Spin or Random mode. The modes are shown next to the parameter wheel legend, and you can select the mode by pressing the legend:

Assigning Slotted Colour and Beam Parameters

To assign slotted colour or beam parameters:

1. Fixture **1** Beam : select the required fixtures and parameter type.
2. (Gobo) → (Stars) : Click on one of the parameter functions on the Slot Toolbar. A submenu of slot positions will appear from which you can select the desired slot:



Controlling Fixture Functions

You can control fixture-specific functions such as Lamp On, Lamp Off and Reset from the Fixture Control Toolbar. The available functions will depend on the currently selected fixture.

To use the Fixture Control Toolbar, select a fixture or group, then select Control on the right of the Slot Toolbar and select the fixture function you require. Make sure that you restore the setting to Fixture Idle afterwards, noting that some fixtures require control commands to be sent for a few seconds before restoring idle.

Figure 8.7. The Fixture Control Toolbar for a Studio Spot 575

Important

Fixture function commands can be placed in the Programmer and recorded into cues. While this is a very powerful feature, it must be used with care to ensure that you don't include fixture reset commands into cues by accident, for example. You should also check the fixture's manual, as some require shutters or dimmers to be closed before sending control commands.

8.3.4 Fanning Parameters

Sometimes you may wish to assign parameters with an offset across consecutive fixtures, so that the value for a particular parameter differs by a fixed step from one fixture to the next. This is known as 'fanning'. For example you could:

- Fan the positions of the Studio Spots across the stage from corner to corner.
- Fan the intensities of the desk channels (100%, 80%, 60%, 40%).

To fan a parameter:

1. Fixture **1** Thru **7** @ **50** : select the fixtures and bring their intensity to 50%.
2. Press and hold the Fan key, whilst moving the I-Wheel.

To fan other parameters, press and hold the Fan, whilst moving the desired parameter wheels.

When fanning, the fixtures at either end of the range take the higher and lower values, with those in between evenly spread across the intervening range. The value change when fanning is always relative to the starting value; if there is no starting value the parameter will fan from 0.

8.4 Creating and Using Palettes

Palettes are the visual building blocks of each specific look on stage, and they are categorised into the four parameter types: **intensity**, **position**, **colour** and **beam**. Palettes can be used to apply these building blocks across large numbers of fixtures, so for example you do not have to remix a particular colour each time it is used in a show.

When you record a cue or scene after assigning fixture parameter values using palettes, Wholehog OS keeps a reference to the palette, rather than a numerical value. Only when you play back the cue or scene does the console looks up the numerical value in the palette. This means that if, for example, you change your mind about a specific position (perhaps because the drum riser is moved downstage), updating the palette will in effect automatically update every cue that that palette was used to build. This is a very

powerful feature, as you can easily make changes that are global across your whole show.

Examples of possible palettes for the tutorial rig are:

- Position palette: All Technobeams on Keyboards
- Position palette: All Technobeams on Drums
- Position palette: All Technobeams on Vocals
- Position palette: All Technobeams on Guitar
- Colour palette: All Studio Colors at Magenta

Palettes are stored in palette directory windows, which can be opened by pressing Open and the associated parameter type key: Intensity, Position, Colour, Beam.

To record, for example, a position palette:

1. Position the Technobeams on the drum riser, accessing each one at a time and moving it into position.
2. Record Position : the Position Directory opens.
3. (Palette 2) : choose a location in the directory by pressing the on-screen button.

Or, using the command line:

- Record Position **2**, Enter

If you leave out the palette location:

- Record Position, Enter

The palette will be recorded in the next available location.

Tip

You can name your palette by pressing Set directly after recording, or later pressing Set together with the palette you wish to name in the palette directory.

To use a palette, select it from its directory window. The palette will directly affect the currently selected fixtures, as long as the palette contains parameter information for the selected fixtures. A palette that puts all Studio Colors in the rig to deep red will therefore apply this immediately to any Studio Colors that are in the current selection.

For example:

1. Open + Colour : open the Colour Directory window.
2. (Studio Color 575) **3** Thru **5** : select the fixtures.
3. (Palette 2) : select the palette from the Colour Directory window.

8.5 Find Out More

For more information, see the *Reference (p.63)* section of the manual:
For: The Programmer
See: *Selecting Fixtures, Modifying Parameters (p.155)*
For: Editors
See: *Working with Editors (p.112)*
For: Selecting Fixtures
See: *Selecting Fixtures (p.156)*
For: Groups
See: *Working with Groups (p.181)*
For: Setting parameters
See: *Modifying Parameters (p.160)*
For: Palettes
See: *Working with Palettes (p.187)*
For: Fanning
See: *Fanning (p.173)*

Section 9: Recording Cues and Times

9.1 Building the Look

Once you have created the 'building blocks' for your show, you can start building cues by mixing selections of groups, palettes and individual fixture parameters. For example:

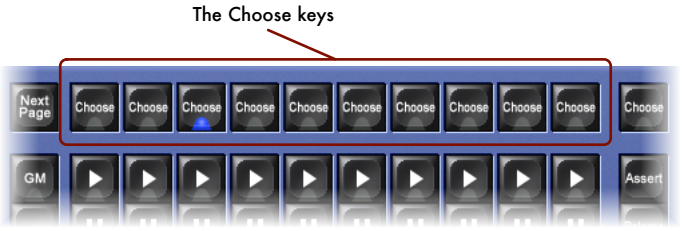
- (Technobeams Drums) Full, Position (Drums), Colour (Blue), Enter

This sets the Technobeams Drums group to full intensity, to the Drums position palette setting, and applies the Blue colour palette to them. Note that the parts of this command that are shown in (brackets) are user-defined labels; in this case group and palette names.

9.2 Recording a Cue

Now that you have fixtures selected and intensity, position, colour and beam assigned, you can record your first cue. For simple programming, the console allows you to record cues quickly to one of the playback masters, ready for immediate playback:

- Record, Choose : press the Choose key for the master of your choice:



This will create a new cue in a new cuelist on the selected master. You can make further states in the Programmer and record new cues in the same way; the console will automatically increment the cue number and store to the chosen cuelist. If you wish to start a new cuelist simply choose another master.

Note that when you record a cue, the values remain in the Programmer, but the background colour changes from blue to grey. This indicates that the contents of the Programmer are available for recording to another cuelist, but not to the same cuelist. You can keep the values in the Programmer to act as the basis for the next cue on the same list, but because of tracking, only the changed parameter values will be recorded. For an overview of tracking, see *Tracking (p.8)*.

Tip

You can clear fixtures and their values from the Programmer between recording each cue by pressing the Clear key.

9.3 Assigning Timings

When you record a cue, it is given the default crossfade times. You can change the default times in the Default Timing pane in the User Preferences window.

The In Time is the duration over which fixture parameters will change when the fixture's intensity is increasing. The Out Time is the duration over which fixture parameters will change when the fixture's intensity is decreasing. A cue with different In and Out times is said to have a **split fade**.

To change the timings of a cue:

1. Press the Choose key of the master that the cue is in.
2. Cue **1** Time **10**, Enter : sets the In and Out time of Cue 1 on the selected master to 10 seconds.

To create a split fade, with different in and out times:

1. Press the Choose key of the master that the cue is in.
2. Cue **1** Time **10** / **20**, Enter : sets the In time to 10 seconds and the Out time to 20 seconds, on Cue 1 on the selected master.

9.4 Find Out More

For more information, see the *Reference (p.63)* section of the manual:
For: Cues
See: *Working with Cues (p.211)*
For: Cue timings
See: *Working with Cue Timing and Ordering (p.225)*
For: Cuelists
See: *Working with Cuelists (p.243)*
For: Effects
See: *Working with Effects (p.251)*

Section 10: Playback

10.1 Playing Back Cues

When you recorded your cues, the console automatically created a new cuelist on the chosen master, so you can now run your cues directly from that master. The playback controls for each master are shown in *Figure 10.1, "Playback Controls"*.

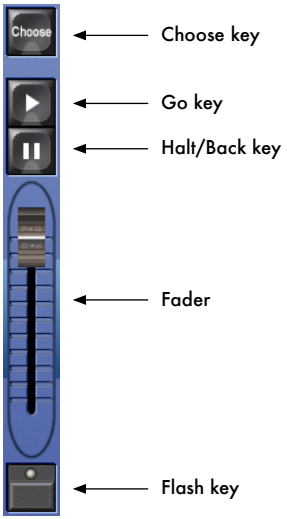


Figure 10.1. Playback Controls

The playback controls work as follows:

- **Go:** if the master is inactive pressing this key will output the current cue in its cuelist to the stage. If already active then pressing Go advances to the next cue in the cuelist, unless there is a paused crossfade, in which case the crossfade will be restarted (see Halt/Back below).
- **Halt/Back:** pauses any running crossfades. If there are no running crossfades then it will start a fade back to the previous cue.
- **Fader:** controls the intensity of fixtures under the control of this master.
- **Flash:** momentarily puts the intensity of fixtures under the control of this master to the full programmed value, as if the fader had been put to maximum.

You can also control the running of the cuelist using the main controls, located to the right of the ten masters. The main controls operate whichever master is chosen with its

Choose key located above it. The Choose key will light up blue to show the chosen master.

You can increase or decrease the rate of a running cue by pressing and holding the master's Choose key and adjusting the left-hand parameter wheel. Alternatively, you can use the sprung Rate Wheel on the left of the console to momentarily override the rate of the cue.

Once the cuelist reaches the end it will loop back to the first cue in the list.

Tip

The Programmer will have priority over fixture parameter values outputted by the masters. Press Clear to remove the contents of the Programmer to insure that the output on stage is not effected by the current Programmer contents.

10.2 Understanding Feedback

There are several ways in which the console shows you the status of the running cues. The playback control key LEDs display feedback information:

- **Go key (Green):** When solidly lit, this indicates that a crossfade is in progress. When flashing it indicates that a crossfade has been paused.
- **Halt/Back key (Red):** When solidly lit, this indicates that this master is controlling parameters other than intensity. When flashing it indicates that its control of those parameters has been overridden by other masters.
- **Flash key (Red):** When solidly lit, this indicates that this master is controlling fixture intensities. When flashing it indicates that its control of intensity has been overridden by cues on other masters.

The Playback Bar located on the display immediately above the masters shows the details of the running cuelist on each master:

The main information shown on the Playback Bar is:

- If the master is empty, its number is shown.
- The number and name of the cuelist.
- The current cue and its overall time. When the cue is running, it is displayed in green text and the time counts down.

- The next few cues and their times. If you want to see more cues, click and drag the top of the Playback Bar upwards to increase its size.
- The master level as a percentage. If the master is below 100%, then a red bar appears indicating the level.

For more information on the Playback Bar, see *Control and Playback Toolbar Feedback (p.279)*.

10.3 Find Out More

For more information, see the *Reference (p.63)* section of the manual:
For: Cuelist Playback
See: *Cuelist Playback (p.263)*
For: Rate Overrides
See: *Overriding Cuelist Rate During Playback (p.284)*

Section 11: Saving and Shutting Down

11.1 Saving the Show

Your show data is stored on the Wholehog console's internal hard disk in a location that you select when creating the show. The console saves changes to the disk as they are made, and in the event of a power failure, the battery backup will ensure that all saves are completed before the console shuts down.

11.1.1 Saving to CD-ROM

To store a copy of your current show to a CD-ROM use the File Browser pane of the Show Manager window; see *Figure 11.2, "The Current Show pane of the Show Manager window"*:

1. Setup → Shows → CD Burning
2. Navigate to the Folder that contains the show you wish to burn using the left-hand file list. Select it and press Add to CD. Alternatively drag it into the right-hand CD Master list.
3. Repeat for all the shows you wish to copy to CD.
4. Insert a blank disk and select Burn.

To stop files being burnt, or to make new selection for another CD-ROM, select Clear CD Master.

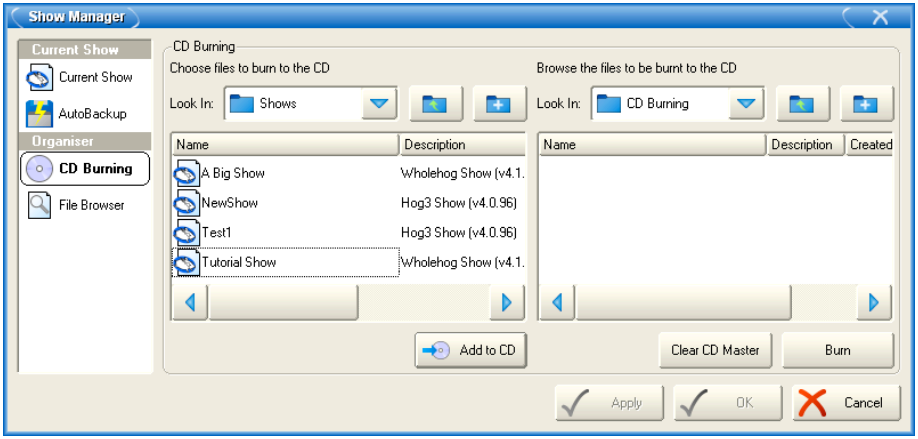


Figure 11.1. The CD Burning pane of the Show Manager window

11.1.2 Saving to Zip Disk or USB Drive

To store a copy of your current show to a Zip disk or USB drive (on Windows based consoles) use the Current Show pane of the Show Manager window; see *Figure 11.2, "The Current Show pane of the Show Manager window"*:

1. Insert a Zip disk into the drive located under the console's front wrist rest, or a USB drive into an available USB port.
2. Setup → Shows → Current Show
3. Press the Backup button.
4. Select a location, file name and description for the backup show file.

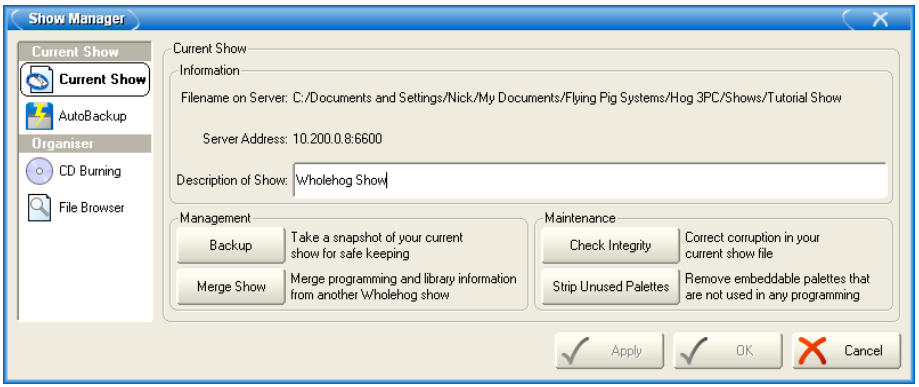


Figure 11.2. The Current Show pane of the Show Manager window

11.2 Backing Up

It is good practice to backup your show data regularly. You can make backups manually, or you can assign the console to automatically make backups using the Auto Backup function.

11.2.1 Backing Up Manually

Use the Current Show pane of the Show Manager window to store a copy of your current show to another location on the console's hard disk:

1. Setup → Shows → Current Show
2. Press Backup.
3. Select a location. A copy of your show will be saved with '_bck' appended to its file name.

11.2.2 Auto Backup

The console's Auto Backup function will make an automatic backup at specified intervals; the default setting is every twenty minutes. You can specify a location and name for your back-ups, as well as specifying how many the console should keep, the default being the last three. To enable Auto Backup:

1. Setup → Shows → Auto Backup : open the Auto Backup pane of the Shows window; see *Figure 11.3, "The Show Manager Window"*.
2. Press Enable Auto Backup.
3. Browse to desired backup location.
4. Select OK to apply and close.

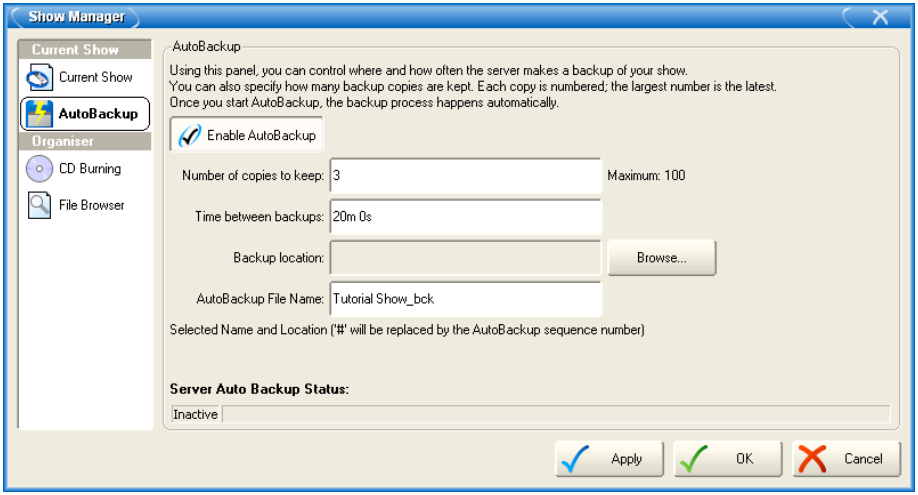

Show Manager
Current Show
Current Show
AutoBackup
Organiser
CD Burning
File Browser
AutoBackup
Using this panel, you can control where and how often the server makes a backup of your show.
You can also specify how many backup copies are kept. Each copy is numbered; the largest number is the latest.
Once you start AutoBackup, the backup process happens automatically.
Enable AutoBackup
Number of copies to keep: 3
Maximum: 100
Time between backups: 20m 0s
Backup location:
Browse...
AutoBackup File Name: Tutorial Show_bck
Selected Name and Location ('#' will be replaced by the AutoBackup sequence number)
Server Auto Backup Status:
Inactive
Apply
OK
Cancel

Figure 11.3. The Show Manager Window

11.3 Shutting Down

To shut down the console:

- Setup → Quit : the Quit button is on the right hand end of the Setup Toolbar.

The Shut Down dialog will open (see *Figure 11.4, "The Shut Down Dialog"*), with the following options:

- **Shut Down:** shutting down will turn the Wholehog console off completely.

- **Restart Console:** restarting is like shutting the console down and turning it on again, and will take you to the Start window.
- **Log Off:** logging off will close your current desktop, Programmer and output screens, as well as closing the current show file. The console is left powered up and running, ready for you or another user to log on.
- **Cancel:** cancels the quit command.

In all cases except cancel, your show data is automatically saved to disk.

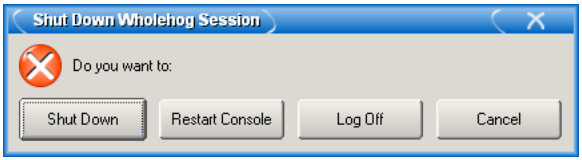


Figure 11.4. The Shut Down Dialog

11.4 Find Out More

For more information, see the *Reference (p.63)* section of the manual:
For: Saving the Show
See: *Managing Show Data (p.121)*
For: Shutting Down
See: *Restarting and Shutting Down (p.120)*

Part R. Reference

The Reference part of the manual describes in detail how to work with the Wholehog OS. While it is possible to work through the Reference in order, it is designed to be used to look up how particular features of the console work, as and when you need them. If you want to be guided through the main operations of setting up the console, and programming and running a show, use the *Tutorial (p.21)*.

Section 12: Setting Up the System

12.1 Setting Up the Console

Many aspects of the Wholehog Operating Software are configured in the Control Panel and the User Preferences window. Settings in the Control Panel apply to the console hardware, while those in the User Preferences window are specific to the current show. To open these windows, press Setup and then either Control Panel or Preferences from the toolbar at the bottom of the right-hand touch screen.

Both the Control Panel window and the User Preferences window have several panes, grouping their contents according to function. Select the desired pane by selecting from the list on the left hand side of the window, see *Figure 12.1, "Pane lists for the Control Panel and User Preferences windows"*.

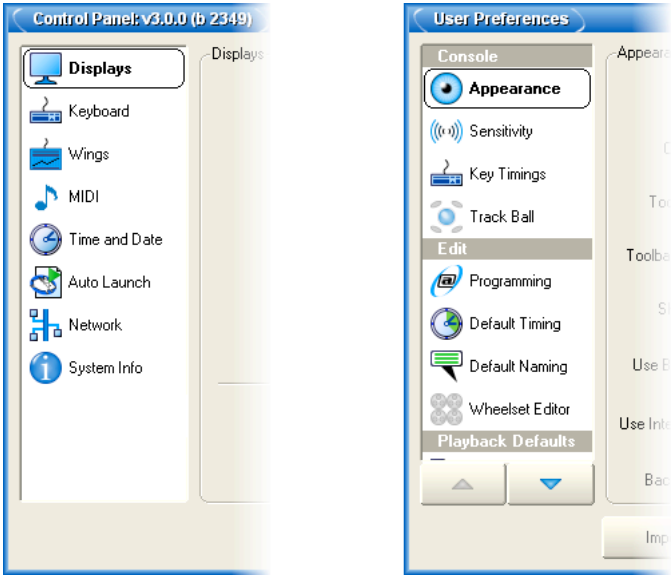


Figure 12.1. Pane lists for the Control Panel and User Preferences windows

Tip

User preference settings are stored as part of the show file. You can also independently save your preference settings and load them into another console or show; see *Saving and Loading Your Preferences (p.125)*. Control Panel settings are unique to the console and must be configured on each console.

12.1.1 Power

You can connect Wholehog consoles to any mains supply between 100 and 240V AC. In the event of power failure, the Wholehog III uses its battery backup supply to save the show data to its hard disk, and shut down the console.

12.1.2 Touch Screens

The two large screens are touch-sensitive, so you can access buttons and data directly by touching them. For information on maintenance of the touch screens, see *Care of Touch Screens on Wholehog Consoles (p.405)*.

Calibration

The touch screens may occasionally need to be calibrated to ensure that where you are pressing is aligned with the screen's display. To recalibrate on start-up, select Touch-screens in the Start window. A target will appear sequentially in each corner, which you should touch in turn; see *Figure 12.2, "The Calibration Screen"*. The calibration is complete when you have done all four corners; press Enter when finished. You can press the Set key to start the process again if necessary.

You can also calibrate the touch screens at any time by pressing the Calibrate Touch Screens button in the Displays pane of the Control Panel.

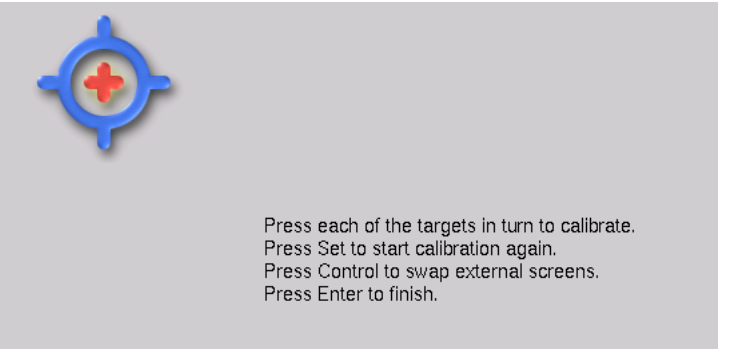

Press each of the targets in turn to calibrate.
Press Set to start calibration again.
Press Control to swap external screens.
Press Enter to finish.

Figure 12.2. The Calibration Screen

Brightness

You can adjust the brightness of the touch screens by holding down the Setup key and adjusting the parameter wheels labelled Left Backlight or Right Backlight.

Tip

If you find the graphics on the screens are too bright, you can change the console's colour scheme to a darker one in Setup → Preferences → Appearance.

Backlight Off Time

The backlights that illuminate the touch screens switch off automatically after a time if the console is idle, to maximise their life. You can adjust the amount of time the backlights wait before switching off in the Appearance pane of the User Preferences window:

1. Setup → Preferences → Appearance
2. Adjust the Backlight Off time located at the bottom of the pane, either by pressing the arrows to increment or decrement the value, or by clicking on the value, pressing Set and typing in a new value.
3. Select OK to apply and close.

Tip

Once the Wholehog III displays are asleep you can wake them up by pressing any key. It is a good idea to use the Pig key as this will prevent you from accidentally changing any data within the show.

Disabling Touch Screens

You can disable the touch-sensitive action of the screens, or turn them off all together, in the Displays pane of the Control Panel:

1. Setup → Control Panel → Displays
2. Press the buttons for the LCD and Touchscreen functions to toggle them on or off.
3. Select OK to apply and close

12.1.3 External Displays

You can attach two external displays to the Wholehog III using standard VGA connectors. The screen resolutions supported are:

- 800x600
- 1024x768
- 1280x1024

To use external displays, you must enable them and set the screen resolution in the Displays pane of the Control Panel:

- Setup → Control Panel → Displays

You will need to restart the console to enable the external monitors; see *Restarting and Shutting Down (p.120)*.

External Touch Screens

You can use external touch screens with the Wholehog III, connected using one of the console's USB ports. The Wholehog III supports several Elo brand models as shown in the following table. A 12" and a 17" touchscreen is available from High End Systems (part numbers #7408002 and #61040021). You can find more information about them at *www.highend.com/products/controllers/touchscreenmonitor.asp*.

Size	ELO Model	Description
17"	ET1725L-7CWF-1-G	AccuTouch 2216 series
17"	ET1725L-7UWF-1	Accutouch 3000 series
17"	ET1739L-8CWA-3-G	IntelliTouch 2700 series
12"	ET1229L-7UWA-1	Accutouch 3000 series
12"	ET1215L-7CWA-1-G	AccuTouch 1000 Series
12"	ET1229L-8UWA-1	IntelliTouch 2500 Series
12"	ET1229L-7CWA-1-ZBD-G	AccuTouch 2216 series

As with any external display, you need to enable external touch screens in the Control Panel; see *External Displays (p.67)*. The display will be automatically detected by the console, and should be calibrated in the same way as the console's built-in touch screens; see *Calibration (p.66)*. If you have two external touch screens, the pointer may initially appear on the other screen to the one you have pressed. If this happens, press the Control key during calibration to swap the touch screens.

12.1.4 Desklights

You can adjust the brightness of the desklights by holding down the Setup key and adjusting the third parameter wheel. You can also use the fourth (right hand) parameter wheel to adjust the brightness of the LEDs in the keys on the front panel.

By default, the desklights are white while the console is being used and turn blue after a period of inactivity; the period is determined by the *Backlight Off Time (p.67)*. If you prefer the desklights always to be blue, you can select Use Blue Desklights in the Appearance pane of the User Preferences window.

12.1.5 Trackball and Wheels

The Wholehog III has a number of controls that allow continuous input of data rather than discrete values: the Trackball, the I-Wheel, the Rate Wheel, and the four Parameter Wheels.

The Trackball has two modes:

- **Pointer Mode:** controls the on-screen pointer, like a mouse on a personal computer.
- **Position Mode:** controls the position (pan and tilt) of fixtures. The Trackball lights up blue in this mode.

You can switch between the two modes by pressing the top right Trackball key. You can also lock the Trackball to one mode or another in the Track Ball pane of the User Preferences window:

1. Setup → Preferences → Trackball
2. Select Pointer or Position from the drop down menu to lock the Trackball in that mode. Select Toggles to restore the ability to change modes with the top right Trackball key.
3. Select OK to apply and close.

Tip

Make sure you have an external mouse connected if you lock the Trackball in position mode, and you don't want to control the on screen pointer only by pressing the touchscreens.

Trackball Keys

You can configure the function of the four keys above and below the Trackball, according to the current mode (pointer or position); this is known as 'mapping'. For example, in pointer mode you could have Right Click, Left Click, Flip and Ball Mode mapped, in position mode you could have Flip, Next, Ortho Toggle and Ball Mode mapped. Trackball key mapping can be assigned in the Track Ball pane of the User Preferences window; see *Figure 12.3, "The Track Ball pane of the User Preferences window"*.

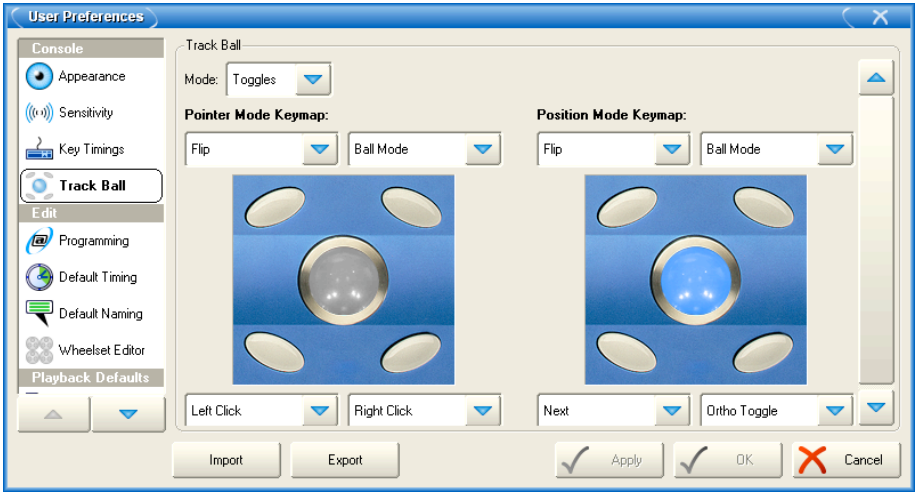


Figure 12.3. The Track Ball pane of the User Preferences window

The following navigation functions are available:

- **Ball Mode:** switches the Trackball between position and pointer modes.

- **Ortho Toggle:** switches the Trackball between Ortho and Normal. When in position mode, with ortho on, the Trackball will only control pan or tilt, not both at the same time. This can be useful for accurately setting fixtures.
- **Right Click:** the same as a right-click with the mouse. This is usually used to bring up a contextual menu with commands such as copy and paste.
- **Left Click:** the same as left-click with the mouse.
- **Shuffle:** shuffles the pointer across windows, bringing that window to the front (unlike shuffle on the Window Control Toolbar which shuffles the screen view).
- **Swap to Screen:** moves the pointer between screens (useful for when external displays are connected to quickly move between screens).
- **Set:** the same as the Set key, but closer to the Trackball for quick cell editing.
- **Close Window:** closes the active window.

In addition, the following fixture and playback functions are available:

- **Next:** sub-selects the next fixture in the current selection. See *Sub Selections (p.158)*.
- **Back:** sub-selects the previous fixture in the current selection. See *Sub Selections (p.158)*.
- **Select All:** selects all the fixtures currently in the Programmer. See *Select All (p.157)*.
- **Flip:** changes the pan and tilt of a moving head fixture to point at the same position on the stage, but from the other end of its movement range. See *Flip (p.163)*.
- **Fade Changes:** toggles the state of the Fade Changes button in the active editor. See *Fade Changes (p.206)*.
- **Next Page:** advances to the next page in the page directory. See *Changing Page (p.304)*.
- **Out:** assigns the current selection's intensity to zero; see *Intensity (p.161)*.

The default settings for the Trackball keys are:

Trackball Key	Pointer Mode	Position Mode
top left	flip	flip
top right	ball mode	ball mode
bottom left	left click	next
bottom right	right click	ortho toggle

Trackball, Parameter Wheel and I-Wheel Sensitivity

The sensitivity of the Trackball when in position mode, the I-Wheel and the Parameter Wheels can be adjusted in the Sensitivity pane of the User Preferences window.

The sensitivity determines how much the value being controlled changes for a given movement of the control. For example, setting the sensitivity of the parameter wheels to Slow will mean that you have to turn the wheel a lot to change the controlled value by a given amount. A High sensitivity will mean that you have to move the wheel only a little to get the same change of value.

Using an External Mouse

You can also use an external mouse or trackball to supplement the built-in Trackball. This will always control the on screen pointer, irrespective of the Trackball mode.

The external mouse is connected by a standard PS2 5 pin mini-DIN connector, and you can adjust its sensitivity in the Sensitivity pane of the User Preferences window. The double click speed for the mouse and Trackball can be assigned in the Key Timings pane of the User Preferences window.

12.1.6 Keys and Buttons

In the manual the word 'key' is used to indicate a hardware button on the Wholehog III's front panel. For example: 'press the Enter key'. The word 'button' refers to 'virtual' buttons that can be pressed on the touch screens or clicked on with the Trackball or mouse.

You can adjust various key timings in the Key Timings pane of the User Preferences window:

Setting	Function
Key repeat delay	When you hold down a key, this is the delay before it starts to repeat.
Key repeat period	When you hold down a key, this is the time between repeats.
Key double press time	When you press a key twice within this time, the Wholehog III interprets this as a double-press.

Note that these timings only apply to the physical keys on the console's front panel, not to on-screen buttons.

Tip

Double-pressing a key is often a shortcut way of opening the window associated with the key; for example, double pressing the Beam key will open the Bean directory window. If you prefer not to use the double-press shortcuts, then assign the double-press time to zero to disable it.

12.1.7 Keyboards

Using an External Keyboard

You can connect an external keyboard to the Wholehog III via the console's standard PS2 5 pin mini-DIN port or one of the console's USB ports. Choose a keyboard model, and assign the keyboard layout according to the language of the keyboard you have connected, in the Keyboard pane of the Control Panel.

You can adjust the timings for Repeat Delay, Repeat Period, and Double Press in the Key Timings pane of the User Preferences window.

Tip

You can use an external keyboard to control many of the Wholehog III's functions, as well as entering numbers and text; see *Keyboard Shortcuts (p.397)*. This is particularly useful if you are using the Rack Mount Unit version of the console.

Using the On-screen Keyboard

You can use the on-screen keyboard to enter text when an external keyboard is not present; see *Figure 12.4, "The On-screen Keyboard"*. When prompted to insert text, press the Set key to launch a touch-screen keyboard. You can use the Pig key as a 'shift' for uppercase characters. Press the Enter key when you have finished typing.

To close the on-screen keyboard without making any changes, press Set instead of Enter.

Figure 12.4. The On-screen Keyboard

12.1.8 Date and Time

The console has a built in clock. Assign the date, time and time zone in the Time and Date pane of the Control Panel. You can also assign the format for the date and time in the Appearance pane of the Preferences window.

You will have to restart the Wholehog OS and its currently running show for changes to date and time to take effect; see *Restarting and Shutting Down (p.120)*.

12.1.9 Printers

The Hog 3PC will print directly to the default printer that you have set up in Windows, without needing any additional setup in Wholehog OS. The remainder of this section describes how you can connect printers to other Wholehog OS consoles.

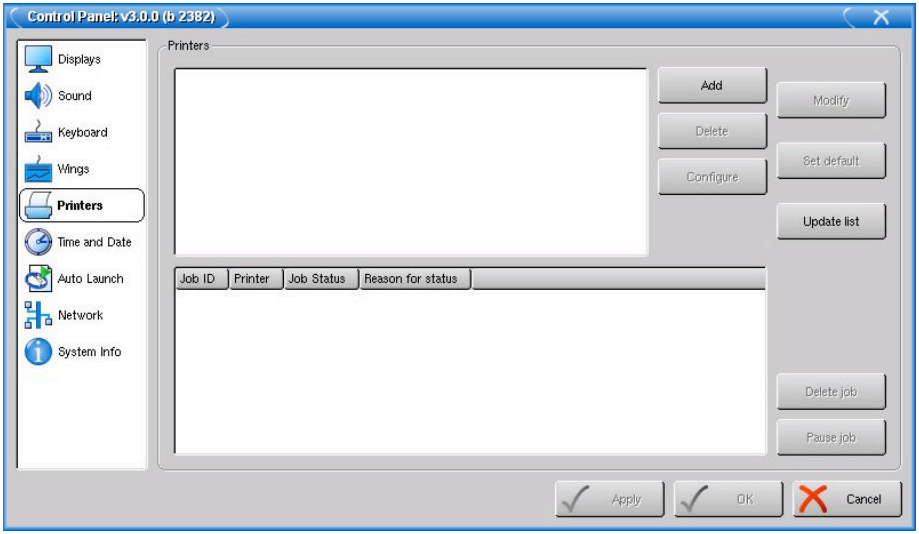


Figure 12.5. The Printers Pane of the Control Panel

Adding a Printer

You can connect a printer directly to a Wholehog III console's **USB** port, or to the network using a **hub** or **switch**. Network printers can be used by all consoles on the network.

If you are not sure if your printer is supported by the Wholehog III, follow the steps below until Page 5, and check the list of available printer manufacturers and models. Once you are sure your printer is supported, connect it to the USB port or network and set it up:

1. Setup → Control Panel → Printers : open the Printers pane (see *Figure 12.5, "The Printers Pane of the Control Panel"*).
2. Click on Add. You will be guided through the setup procedure.
3. **Page 1:** Enter a printer name, location and description. The name is used when you choose a printer to print with. Location and description are for users' information only, and are optional.
4. **Page 2:** Select the type of connection; either network or USB.
5. **Page 3 (network printers only):** Choose the type of network connection you use to connect to your network printer. If the printer is connected to a Microsoft Windows computer and is shared over a network, choose the SMB option. If your printer is HP JetDirect or AppSocket compatible,

choose that option. If your printer has IPP support, you may use IPP. If both IPP and AppSocket/HP JetDirect are available, try the AppSocket/HP JetDirect option first.

6. **Page 4 (network printers only):** Enter the network address of your printer. For shared Windows printers, you may need to enter a username and password, in the form: **`user:password@printserver.mynetwork`**.
7. **Page 5:** Select the manufacturer and model of your printer.
8. **Page 6:** Check that all the information displayed is correct. If it is, press Finish to add your new printer.

On return to the configuration panel, you should see your new printer displayed in the printer list. If it is not there, click on the Update List button. If it still doesn't show, try installing the printer again, ensuring you enter the printer's network address correctly.

Setting Printer Defaults

You can assign printer defaults from the Control Panel:

- Setup → Control Panel → Printers : open the Printers pane; see *Figure 12.5, "The Printers Pane of the Control Panel"*.

To assign a printer as the default printer, so that it is automatically selected when printing, select it in the list of printers, and click on Set Default.

To choose default settings (paper size, paper source, and so on) for a printer, select it in the list and click on Configure to open the Printer Properties window. The available options will depend on the printer model; see the printer's documentation for more details. Once you have set the options, click OK.

Modifying a Printer

You can modify a printer from the Control Panel:

1. Setup → Control Panel → Printers : open the Printers pane; see *Figure 12.5, "The Printers Pane of the Control Panel"*.
2. Select the printer you want to modify from the list.
3. Click on Modify. You will be guided through options, which are the same as for *Adding a Printer (p.73)* except that you cannot change the printer's name.

Removing a Printer

To remove a printer from the console:

1. Setup → Control Panel → Printers : open the Printers pane; see *Figure 12.5, "The Printers Pane of the Control Panel"*.

2. Select the printer you want to remove from the list.
3. Click on Delete.

Important

You cannot undo removing a printer.

12.2 Setting Up the Network

The following Wholehog consoles are network capable:

- Wholehog III
- Road Hog Full Boar
- Hog iPC
- Hog 3PC

On the back of each of these consoles is a dedicated 100 Base-T Ethernet jack that can be used for connecting to a network of DMX Processors, MIDI/Timecode Processors, computers, and other consoles. If there is more than one Ethernet jack on the back of the console, then you should use the jack labeled 'Hog-Net'. The hardware on personal computers running Hog 3PC will vary but at least one 100 Base-T Ethernet hardware device must be properly installed and enabled in order for Hog 3PC to successfully communicate to other nodes on a network.

You should connect all components of a Wholehog network using category 5 Ethernet cables and use at least a 100Mb Ethernet switch or router. Gigabit switches are also Wholehog network compatible. When connecting a console directly to a DMX Processor or to another console without using a network switch or router you must use a Category 5 *crossover* cable. (see the example in *Typical Hognet Network Configurations (p.79)*).

The simplest Wholehog network consists of a console and a DMX Processor that generates DMX to connect to the lighting rig. Only slightly more complex is the case of a system with a single console and several DMX Processors connected together with an Ethernet switch. Large systems can have several consoles, Hog 3PC systems, DMX Processors, MIDI/Timecode Processors, and other network devices, controlling large lighting rigs.

12.2.1 Console Network Adapters

Each network-capable console or personal computer running Hog 3PC will have at least one network adaptor. You can select, view and configure the adaptor in the Control Panel:

- Setup → Control Panel → Network : open the Network pane of the Control Panel; see *Figure 12.6, "The Network pane of the Control Panel"*.

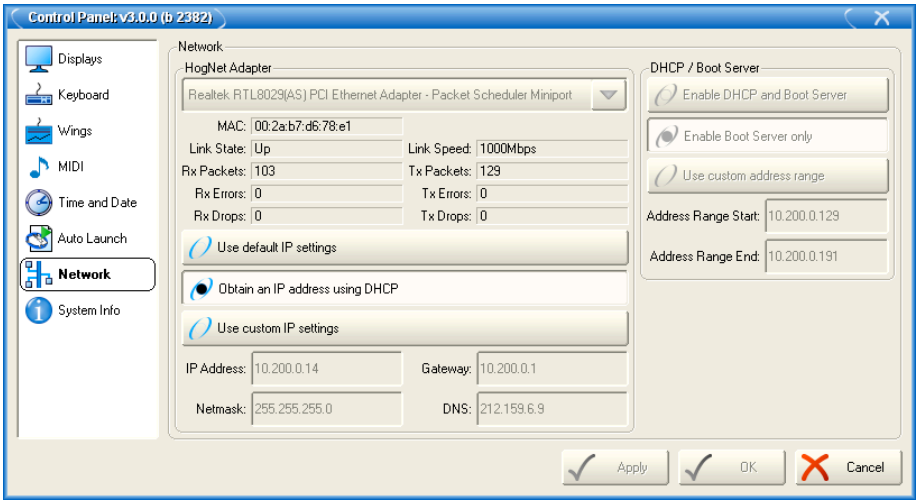


Figure 12.6. The Network pane of the Control Panel

Hog iPC, Road Hog Full Boar, and Wholehog III consoles will only list one available network adapter while Windows XP computers running Hog 3PC can have more than one network adapter listed depending on how many network adapters are installed and enabled on the computer.

After selecting an adapter from the drop down menu, the area below the menu will show the adapter's current status:

- A link status of Up indicates the adapter is connected to a network and is ready to be configured to communicate to other network devices.
- A link status of Disconnected indicates the adapter is running but is unable to communicate to other nodes because the network cable is not connected to a network.
- A link status of Down indicates the adapter is either disabled or in an unstable state and is not usable for show operation.

Only network adapters with a link state of Up will be able to communicate with other nodes on the network. If none of the listed adapters are in the Up state then the Wholehog OS will not operate on a network and will instead operate as a standalone console using a loopback address of 127.0.0.1.

Configuring the Network Adapter

For a network adapter to properly communicate on a network it must be configured with an IP address setting that is compatible with other devices on the network. There are three main options when configuring an IP address for an adapter:

Use default IP settings: select this option to use an IP address of 172.31.0.1.

Obtain an IP address using DHCP: select this option when running the console on a network that contains a DHCP server such as a DHCP router or a Wholehog console running a DHCP server.

Important

If you choose to obtain an IP address using DHCP on the console and no DHCP server is present on the network, then the console will revert to a loopback address of 127.0.0.1 which is not a usable network address for network show operation. In this case you should use a custom IP address.

Use custom IP settings: This option allows you to specify the IP address and subnet mask settings of the Console. This option is most commonly used on networks where a DHCP server is not present but multiple unique IP addresses need to be specified.

Enabling the DHCP Server

In addition to being DHCP client compatible, all network enabled consoles are also capable of running a DHCP server themselves. Enabling DHCP allows the console to hand out IP addresses to other consoles, DMX Processors, and computers on the network without needing to manually configure static IP addresses for every device on the network.

Enabling the Boot Server

Included in the DHCP server options of the console is the boot server. The boot server process is separate from the DHCP server and is used by Wholehog consoles to provide remote software imaging for the DMX Processor 8000. You can select options to either run only a Boot server (with or without a custom address range) or to run both a Boot server and a DHCP server. When running both, the custom address range applies to both the DHCP server and the Boot server.

Firewalls and Hog 3PC

Firewalls help to provide increased network security by controlling access to private networks and computers based on the public IP address of the client. Since the Wholehog console depends on network traffic for communication to DMX Processors and other Wholehog nodes it is recommended that you configure your network and computer firewalls and security settings to allow for Wholehog network traffic. For some firewall applications this might mean turning off the firewall completely.

12.2.2 Configuring Hog-Net Network Settings on DMX Processors and MIDI/Timecode Processors

All Wholehog network processors have a network configuration menu used to configure IP address settings for that particular node. To access this menu on the DMX Processor 2000:

- Network → IP Status → IP Config

On the DMX Processor 8000 the menu is slightly different because it has two network adapters:

- Network → Hognet → Hognet Config

Configuring the IP addresses and subnet addresses on network processors follow the same rules and principles as for console network adapters; see *Console Network Adapters (p.75)*.

12.2.3 Running a Show Server

Once you have configured all the network components on the network with IP addresses, you must decide which console will act as the Show Server. The show server is the main console in the network on which the show file is loaded and stored. It is the desk which 'serves' the show to the rest of the network. There can only be one show server on the network. You can enable or disable the show server on the console only in the Start screen by pressing the Settings button.

Tip

Show server, DHCP server, Boot Server: the generic word 'server' is often mentioned when working with the Wholehog OS but there are actually three different types of servers that are at work in a networked Wholehog show. The DHCP Server manages IP address assignments to other consoles, nodes, and computers on the network through the use of Dynamic Host Control Protocol (DHCP). A Show Server on the other hand refers to the server process running on the main show console which manages show data and distribution. The DHCP Server and the Show Server are independent of one another and do not need to be running on the same console. And lastly there is the Boot Server, used by Wholehog consoles to provide remote software imaging for the DMX Processor 8000.

12.2.4 Port Numbers and Net Numbers

The Port Number

Since multiple shows can be run on a single network, each show server running on the network must have its own port number to keep lighting data for each show on the network seperated. Nodes connecting to the show server must then have the same port number as the show server console. For example, a console running a show server on the network on port 6600 means other nodes such as DMX Processors on the network will need a port number of 6600 as well to join that same show.

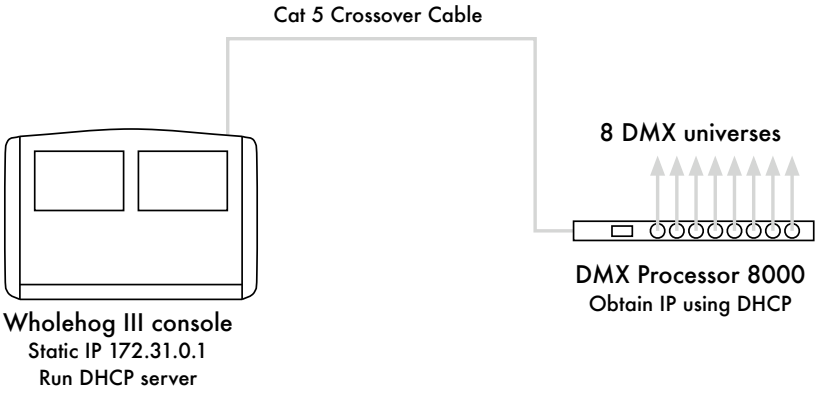
The Net Number

Each node type (console, DMX Processor 2000, DMX Processor 8000, vizualiser, and so on) that is connected to a show server must be uniquely identified by the show server by its net number. For example, if you have three consoles on the same show the consoles might have net numbers such as one, two, and three.

12.2.5 Typical Hognet Network Configurations

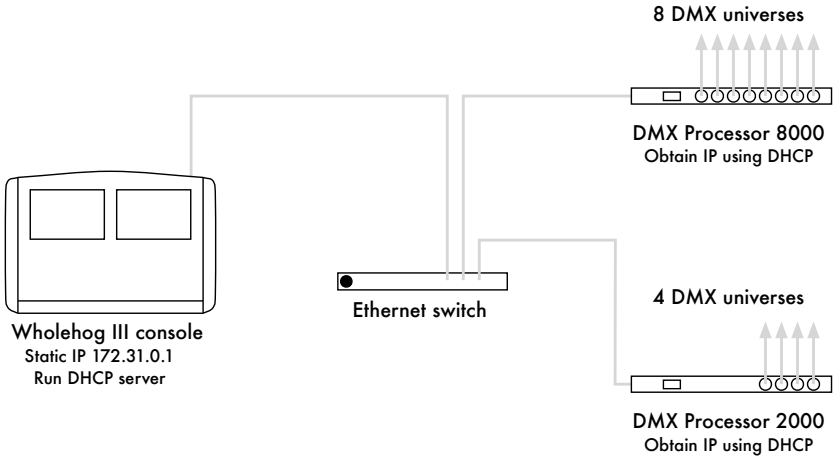
Example A

A single console and single DMX Processor.



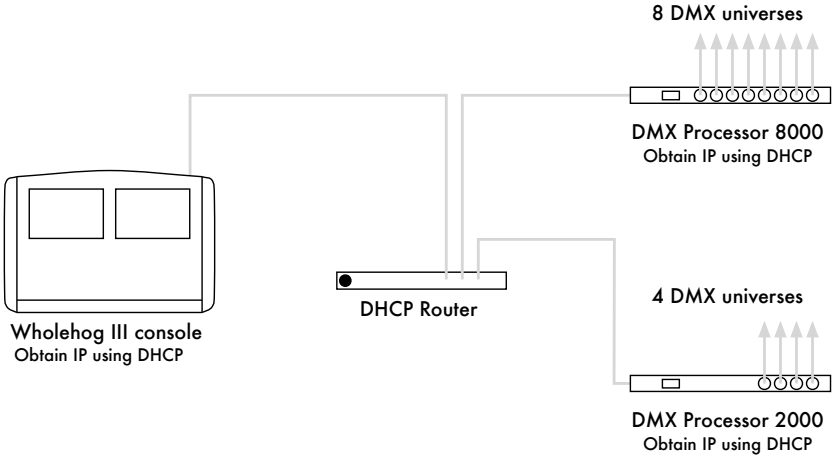
Example B

The console is a DHCP server, and all other nodes obtain an IP adress from it.



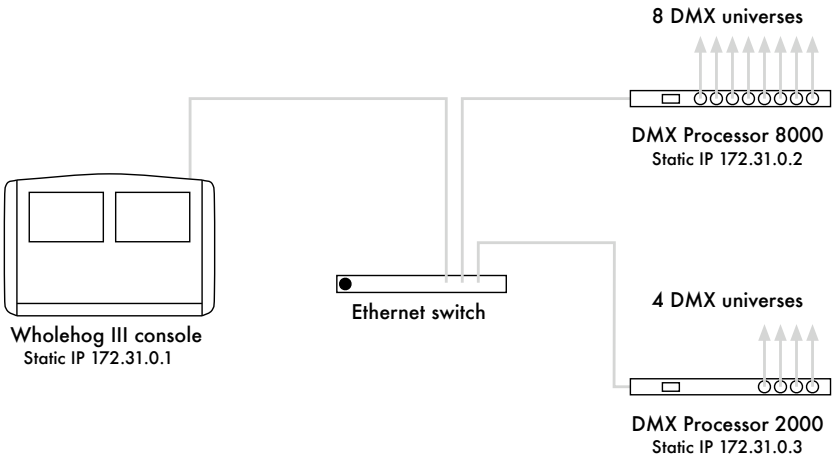
Example C

A DHCP Router serves all components.



Example D

All components have a custom unique static IP address.



12.2.6 Connecting One Console to Several DMX Processors

If you have a single console and several DMX Processors, you should link them all to an Ethernet **switch** using certified Category 5 non-crossover cables; see *Figure 12.7, "A Typical Network with Several DMX Processors"*.

Ensure that both devices are set to the same port number; see *Network Settings (p.85)*. No further network configuration is required as the Wholehog III and DMX Processor configure themselves automatically.

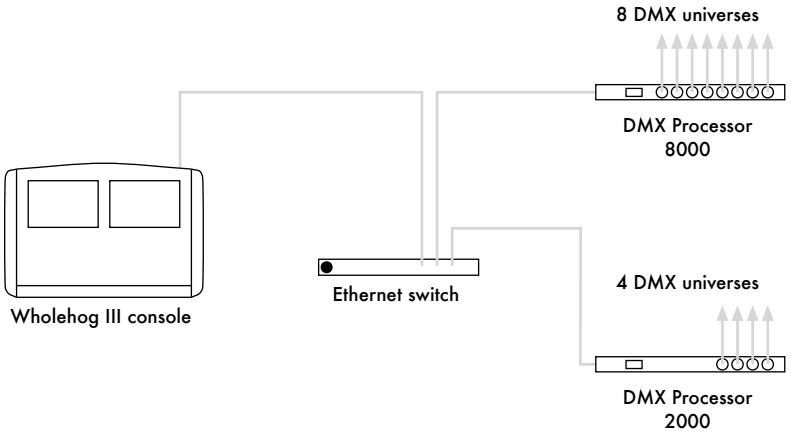


Figure 12.7. A Typical Network with Several DMX Processors

12.2.7 Connecting Multiple Consoles

If you have multiple console systems (Wholehog III console, Hog iPC console, Road Hog Full Boar console, and/or Hog 3PC computer) you can run one console as a server and any number of console systems as clients. Client consoles log onto the show that is running on the server console and can access all network devices connected to the running show. All console systems must be running on the same port number and have unique console numbers.

You should link all consoles and network devices to an Ethernet switch using certified Category 5 non-crossover cables. For information on connecting to a network show; see *Connect to Show (p.118)*.

12.2.8 Advanced Network Setups

While it is most common to use the automatic configuration of your Wholehog III networking with a running DHCP server, you can manually configure the network settings. You will find basic guidance here, but if you are planning a complex network please contact Flying Pig Systems for further advice and assistance.

By default, consoles act as DHCP servers, giving IP addresses to DMX Processors, console systems, and other network devices. If desired, a network device can be configured to have its IP address assigned by the user (known as a 'static' address). You can configure custom IP settings and DHCP ranges in the Network pane of the Control Panel; see *Figure 12.6, "The Network pane of the Control Panel"*. When assigning custom IP addresses, you must assign a unique address to each device within the system.

12.2.9 More than One Show on the Network

If you want to run more than one show on the same network, you need to choose a port number for each show. The default port number is 6600, so the second show could be on 6601, the third on 6602, and so on. You need to assign the port number of each console system and network device according to the show it is used with.

12.2.10 Connecting to an Existing Network

You can connect the console to an existing ethernet network if desired. Contact the administrator of the network to obtain the correct network settings.

Important

You should disable the DHCP server of the console before connecting to an existing computer network, otherwise it may interfere with the correct operation of the network.

12.2.11 Network File Sharing

You can connect to drives on a local network or remote computer to transfer show files. Only compressed show file backup (.tar.gz) files can be transferred with Network File Sharing.

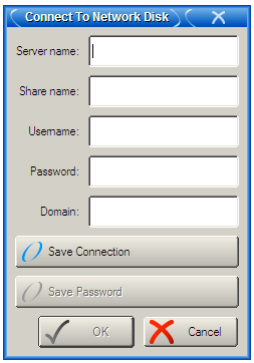
Mapping Network Drives

Network drives are available within the Start window and the Backup window.

To map a network drive:

1. Connect a remote computer or network to the Hog-Net network.
2. Click the Browse button in the Start or Backup window.
3. Click on the Map Network Drive button.
4. Enter data for the following fields in the Connect to Network Disk window:
    - **Server name:** the host name or IP address of the remote computer
    - **Share name:** the name of the shared directory on the remote computer
    - **Username:** the user name to access the shared directory on the remote computer (if required)
    - **Password:** the password to access the shared directory on the remote computer (if required)

- **Domain:** if the user account is a member of a windows domain, enter that domain name here, otherwise leave this field blank.



Note that depending upon your network drive configuration, not all fields may be required.

5. Check the box if you want the connection to be saved with the console. If this option is *not* selected, then this mapping will be lost when the console is rebooted or power cycled.
6. Check the box to save the password if you wish to have the password for the drive mapping saved with the above option.

Accessing Network Drives

Once a network drive is mapped, it will appear in the Start and Backup windows under the console heading as a valid drive to browse to. Sub folders of the primary networked drive will also be available.

Disconnecting Network Drives

When browsing a network drive, the Disconnect Network Drive button is available in the top right corner of the browse window. Pressing this button will un-map and disconnect the network drive.

12.3 Working with Network Processors

There are two types of network processor: the DMX Processor 8000 provides sixteen universes of DMX or Art-Net output while the DMX Processor 2000 provides four DMX outputs. A network processor needs mains power at any voltage between 100 and 240V AC. For information on hardware installation, see *DMX Processor 8000 Hardware Installation and Maintenance (p.406)*.

You can control the network processor's functions either directly from its front panel, or remotely from a console:

1. Setup → Network : open the Network window.
2. In the Network window, you can assign the Network Number for any network processor connected to the network.
3. To set other functions, select the network processor in the left-hand column, and click on the Settings button.

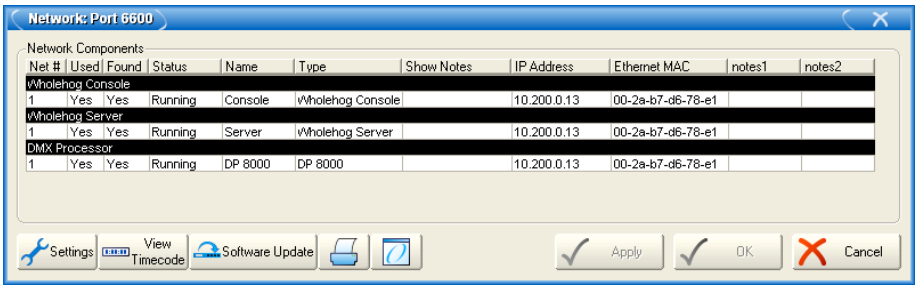

Network: Port 6600
Network Components
Net # | Used | Found | Status | Name | Type | Show Notes | IP Address | Ethernet MAC | notes1 | notes2
Wholehog Console
1 | Yes | Yes | Running | Console | Wholehog Console | 10.200.0.13 | 00-2a-b7-d6-78-e1
Wholehog Server
1 | Yes | Yes | Running | Server | Wholehog Server | 10.200.0.13 | 00-2a-b7-d6-78-e1
DMX Processor
1 | Yes | Yes | Running | DP 8000 | DP 8000 | 10.200.0.13 | 00-2a-b7-d6-78-e1
Settings
View Timecode
Software Update
Apply
OK
Cancel

Figure 12.8. The Network window

12.3.1 Using the network processor's Front Panel Controls

For the remainder of this section, the manual assumes that you are using the network processor's front panel controls. To navigate through the screens:

◀	Move the cursor through the options backwards.
●	Select the option currently highlighted by the cursor.
▶	Move the cursor through the options forwards.

The menus use the following conventions:

OK	Confirm changes and return to the previous screen.
Cancel	Abandon changes and return to the previous screen.
Close	Return to the previous screen.

To assign a numerical value:

1. Move the cursor to the value you want to change.
2. Press the ● key, and the first digit of the number will be highlighted.
3. Use the ● key to change the value, and the ◀ and ▶ keys to select a different digit of the number.
4. When you have finished, press ▶ until no digits are selected. You can then use ◀ and ▶ to select options in the usual way.

12.3.2 Network Settings

A simple network of just a console and an DMX Processor will configure itself automatically. If you have a more complex network, you may need to change some of the network settings. See *Setting Up the Network (p.75)*.

Checking and Setting the Net Number

The net number is displayed on the main screen of the DMX Processor in the top right-hand corner. To assign the net number:

1. Main → Network : navigate to the Network Configuration screen.
2. Assign the net number to any value between 01 and 99.
3. OK : return to the Main screen.

Setting the Port Number

To assign the Port Number:

1. Main → Network : navigate to the Network Configuration screen.
2. Assign the Port Number as required.
3. OK : return to the Main screen.

Checking and Setting the IP Addresses

By default, DMX Processors are set to use **DHCP** to get an **IP address** automatically from a Wholehog console. You can turn this off in the IP Config screen:

1. Main → Network → IP Status → IP Config : navigate to the IP Config screen.
2. Set DHCP On or Off.
3. OK : return to the IP Status screen.
4. Close : return to the Network Configuration screen.
5. OK : return to the Main screen.
6. Main → Control Panel : navigate to the Control Panel.
7. Hard Reset : the DMX Processor needs a hard reset for changes to take effect.

You may want to assign a fixed or 'static' IP address, perhaps if the Wholehog system is sharing a network with non-lighting devices such as personal computers. You should contact your system administrator to determine the optimum settings for your network.

To assign a static IP address:

1. Main → Network → IP Status → IP Config : navigate to the IP Config screen.
2. Set DHCP Off.
3. Set the IP Address and Subnet Mask as required.
4. OK : return to the IP Status screen.
5. Close : return to the Network Configuration screen.
6. OK : return to the Main screen.
7. Main → Control Panel : navigate to the Control Panel.
8. Hard Reset : the DMX Processor needs a hard reset for changes to take effect.

12.3.3 Options and Defaults

The DMX Processor has various options and controls, assigned in the Control Panel screen:

- Main → Control Panel

You can revert all settings to their default values by selecting Set to Defaults.

Tip

The Locked Status, Pin Number, Backlight Off Time and Watchdog settings described below are all held by the DMX Processor, not by the show. Changing show will have no effect on these settings.

Locking the DMX Processor Controls

You can use the Lock function to lock the DMX Processor's controls. The default PIN is 1234; a new PIN can be assigned from a Wholehog console via Setup → Network on the Setup Toolbar. Select the required DMX Processor in the network window and click Settings. Change PIN and OK to apply and close the window.

To lock the DMX Processor locally:

- In the Control Panel, select Lock : the Enter PIN to Unlock screen will appear.

To unlock the DMX Processor locally:

- Enter your chosen 4-digit code number, and cursor right to confirm. The code number will be the default 1234 if you have not changed it to your own.

You can lock and unlock remotely from a console via the DMX Processor Settings window for each specific DMX Processor:

1. Setup → Network : the Network button can be found on the Setup Toolbar.
2. Select the required DMX Processor in the Network window and click Settings to open the DMX Processor Settings window.
3. Lock or unlock the DMX Processor and OK to apply and close the window.

Important

Make sure that you keep a record of your lock code close to hand if your DMX Processor is located away from the console. The DMX Processor cannot be unlocked without it or a console operator.

Backlight Off Time

Selecting Backlight in the Control Panel opens a screen where you can assign the delay time before the backlight goes off. The Permanent setting keeps the light on continually.

Watchdog

The Watchdog feature automatically restarts the DMX Processor if its software stops running for some reason. Watchdog is on by default, and generally it is best to leave it switched on. However, if you suspect that an DMX Processor is not working correctly, you may want to turn Watchdog off so that you can see any error messages before re-starting it:

1. In the Control Panel, select Watchdog.
2. Deselect the Watchdog checkbox, and select OK.

12.3.4 Resetting the DMX Processor

There are two types of reset: soft and hard. Soft Reset resets the DMX Processor so that it re-initialises communication with the network. Hard Reset is equivalent to turning off and on the DMX Processor's mains power. You can do both types of reset from the Control Panel. In addition, you can reset a DMX Processor by right clicking on its entry in the Network window of the console (Setup → Network) and selecting Reset Node.

12.3.5 Checking a DMX Processor's Status

The indicator lights on the front of a DMX Processor 8000 or DMX Processor 2000 display its status on the network.

DMX Processor 8000

Light	On	Blinking	Off
Status	Connected to a show	Connecting	Not Connected to a show
DMX Data	DMX Data output	2Hz Keep Alive	No DMX sending
Net Data	Art-Net output	Art-Net configured, but not connected	Art-Net not configured
USB	USB Device connected and active	USB Device found but not configured	No USB Device found
Hog-Net	Link light for Hog-Net connection	Hog-Net activity	Hog-Net not connected
Fixture Link (Art-Net)	Link light for fixture connection	Fixture activity	Fixture not connected
Write	Writing flash memory	*Fast:* bootloader active *Slow:* updating firmware	Normal activity

DMX Processor 2000

Light	Indicates
100base-T	The established link is 100Mbps (fast ethernet).
10base-T	The established link is only 10Mbps, because the link partner (usually a switch or hub) does not support fast ethernet. A fast ethernet link is recommended.
Full Duplex	The established link is full duplex: both link partners can talk at once. This will only occur when the link partner is a console, PC or ethernet switch/router. Full duplex cannot be established with a lowly hub/repeater.
Collision	A collision has been detected: this will occur once in a while and is perfectly normal. However excessive collision indication might mean a network congestion or reliability problem, or an incompatible link partner.
Transmit	The DMX Processor is transmitting data.
Receive	The DMX Processor is receiving data.
Link	A link has been established. Note that this is a link at the hardware level; it doesn't necessarily indicate that the console is successfully communicating with the DMX Processor.

12.3.6 Expanding the XLR Outputs of a DMX Processor 8000

The DMX Processor 8000 is always processing 16 universes of DMX. These universes are available via the eight 5-pin XLR outputs on the front of the unit as well as via Art-Net. You can expand the XLR outputs to access the full sixteen universes by using an Expander or Widgets/Super Widgets.

Expanding a DMX Processor 8000 Using an Expander

When you connect a USB Expander to a USB port of a DMX Processor 8000 you will need to configure it to outputs 9-16 of the DMX Processor.

To manually configure Widgets:

1. Setup → Network : open the Network window.
2. Select the DMX Processor 8000 in the list by clicking on its net number, and press the Settings button to open the DMX Processor Settings window; see *Figure 12.9, "The Widget Outputs pane of the DMX Processor Settings window"*.
3. Select the Widget Outputs pane.
4. To configure an expander to output ports 9-16 of a DMX Processor 8000, click on a box associated with a port (9-16) and select the expander from the list of serial numbers that appears. Repeat for all the universes you want to output via the widget.
5. Click OK to confirm the settings. The Expander should now have its DMX Data indicator illuminated.

Expanding a DMX Processor 8000 Using Widgets and Super Widgets

When you connect a USB DMX Widget or Super Widget to a USB port of a DMX Processor 8000 you will need to configure it to the next available output of the DMX Processor.

To manually configure Widgets:

1. Setup → Network : open the Network window.
2. Select the DMX Processor 8000 in the list by clicking on its net number, and press the Settings button to open the DMX Processor Settings window; see *Figure 12.9, "The Widget Outputs pane of the DMX Processor Settings window"*.
3. Select the Widget Outputs pane.
4. To configure an expander to output ports 9-16 of a DMX Processor 8000, click on a box associated with a port (9-16) and select the widget from the list of serial numbers that appears. Super Widget ports will appear with the serial number followed by an output number. Repeat for all the universes you want to output via the Widget.
5. Click OK to confirm the settings. The Expander should now have its Active, DMX OK and TX Mode indicators illuminated.

A single Widget or single output of a Super Widget may only be connected to one port at any one time. If a Widget that is already connected to one port is connected to a second port, it will automatically be disconnected from the first port.

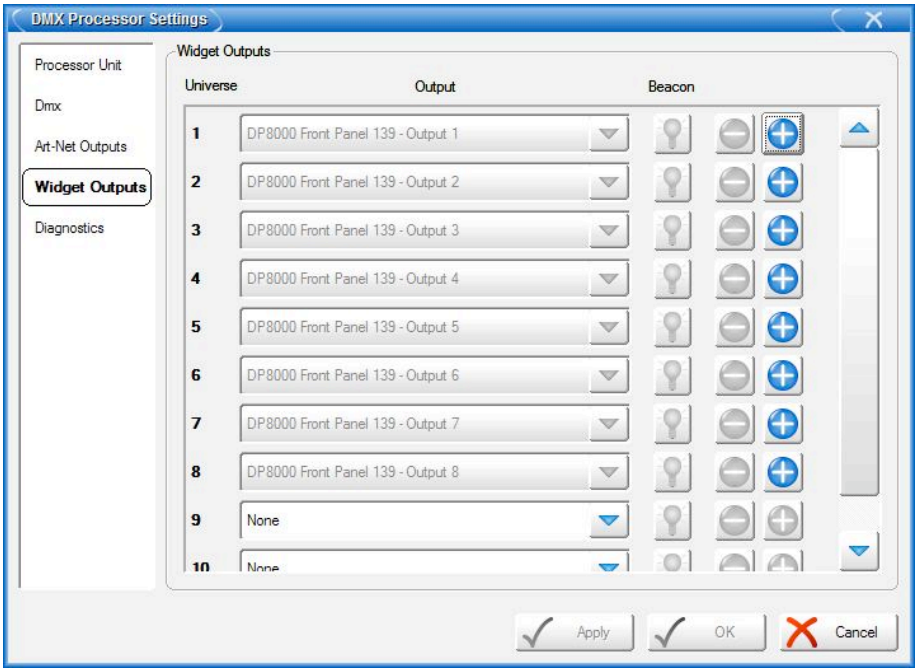


Figure 12.9. The Widget Outputs pane of the DMX Processor Settings window

12.4 Working with Art-Net

Art-Net is a communication system that allows DMX512 to be sent over Ethernet. A single Art-Net line can carry many DMX universes. For in depth information about Art-Net, see Wayne Howell's authoritative book *Rock Solid Ethernet* which contains technical information and guidance on Art-Net usage.

12.4.1 Building an Art-Net Network

The following Wholehog consoles are capable of outputting Art-Net:

- Road Hog Full Boar

The following DMX Processors are capable of outputting Art-Net:

- DMX Processor 8000

On the back of each of these nodes is a dedicated Gigabit Ethernet jack labelled Fixture Link that you can use to connect to a network of Art-Net enabled fixtures, media servers, and Art-Net to DMX converters. You should connect all components of an Art-Net network with category 5 Ethernet cables and using at least a 10Mb Ethernet switch or

router. Gigabit switches are also Art-Net compatible. When connecting the Fixture Link port directly to another Art-Net a Category 5 crossover cable can be used.

Important

Do *not* combine Hog-Net and Art-Net within the same network. This can produce network errors and unreliable data.

12.4.2 Configuring the Fixture Link's Art-Net Settings

To configure a DMX Processor 8000 for use with Art-Net you can use its front panel controls, or you can do it remotely from a console. The Fixture Link of a Road Hog Full Boar must be configured from the console itself.

To configure a DMX Processor 8000 from its front panel:

1. Network → Art-Net → Art-Net Config
2. Set the required IP Address. For information on setting values using an network processor's front panel controls, see *Using the network processor's Front Panel Controls (p.84)*.

To configure the Art-Net output of a Fixture Link from the console:

1. Setup → Network : open the Network window.
2. Select the DMX Processor 8000 and press Settings.
3. Select the Art-Net Outputs pane of the DMX Processor Settings window; see *Figure 12.10, "Art-Net Outputs pane of the DMX Processor Settings window"*.

Configuring the Fixture Link's IP Address

You can configure the Fixture Link's IP address (source address) in one of two ways:

- **Obtain an IP address using DHCP:** select this option when running the Art-Net side of the console on a network that contains a DHCP server such as a DHCP router.

  when using DHCP, the IP Address, Netmask, and Gateway fields will be grayed out. The information contained with them is not relevant to the DHCP configuration.

Important

If you select Obtain an IP address using DHCP on the console and no DHCP server is present on the fixture link's network then the fixture link adapter will revert to a loopback address of 127.0.0.1.

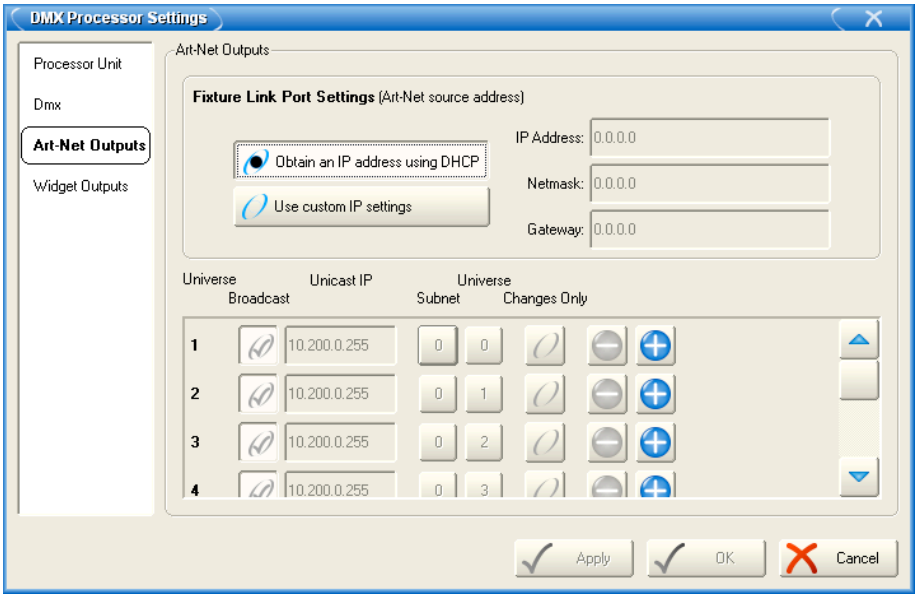


Figure 12.10. Art-Net Outputs pane of the DMX Processor Settings window

- **Use Custom IP Settings:** This option allows you to specify the IP address and subnet mask settings of the fixture link adapter. This option is most commonly used on networks where a DHCP server is not present. Once selected you will need to enter the IP Address, Netmask, and Gateway for this device on the network.

Configuring the Art-Net Output

You can configure the output for each universe using the options in the Art-Net Outputs tab of the DMX Processor Settings window:

- **Universe:** this field denotes which DMX universe to configure.
- **Broadcast:** check this box to enable Broadcasting. When enabled, all Art-Net information will be sent to all nodes.
- **UnicastIP:** when the Broadcast field is not checked, enter an IP address of an Art-Net node to Unicast the universe's data to.
- **Subnet:** click to select the Art-Net subnet (0-15) to transmit this universe's data on. By default, the subnet will match the Node number of the DMX Processor 8000.
- **Universe:** click to select the Art-Net Universe (0-15) to transmit this universe's data on.
- **Changes Only:** check this box to transmit only changes to Art-Net data.

- **-/+:** click these keys to expand or reduce the number of Art-Net configurations for a specific DMX universe.

Art-Net Output Indication

When Art-Net is configured and fixtures are patched, the Net Data LED on the DMX Processor 8000 will illuminate to indicate Art-Net output.

12.4.3 Using a DMX Processor 2000 in Art-Net Mode

A DMX Processor 2000 running version 3.0 or greater software includes a mode that allows you to change the DMX Processor 2000's mode to operate as a standard Art-Net node. When in this mode the display will be inverted and the unit will receive Art-Net input via the Ethernet jack and output four universes of DMX as configured through the DMX Processor 2000's front panel.

To change a DMX Processor 2000 into Art-Net mode:

1. Main → Control Panel : navigate to the Control Panel on the DMX Processor 2000 front panel.
2. Select Mode from the bottom menu of the Control Panel. You will be prompted to reboot the DMX Processor 2000.

3. Once rebooted the DMX Processor 2000 will accept only Art-Net input (not Hog-Net). Use the front panel to configure the Art-Net input and DMX output; see *Configuring the Fixture Link's Art-Net Settings (p.91)*.

To switch the DMX Processor 2000 back to standard mode, change the mode in the Control Panel in the same manner as above.

12.5 Adding Playback Wings

You can increase the number of physical masters by adding Playback and/or Expansion Wings to the console. Playback Bars can be displayed whether a wing is connected or not and can dock at the bottom of the nearest external display to aid identification during playback; see *Figure 12.11, "Docking Playback Bars with wings and external displays"*.

To attach a Playback or Expansion Wing:

1. Connect the wing to the console via a free USB port.
2. Setup → Control Panel → Wings : open the Wings pane of the Control Panel window (see *Figure 12.12, "The Wings pane of the Control Panel"*).

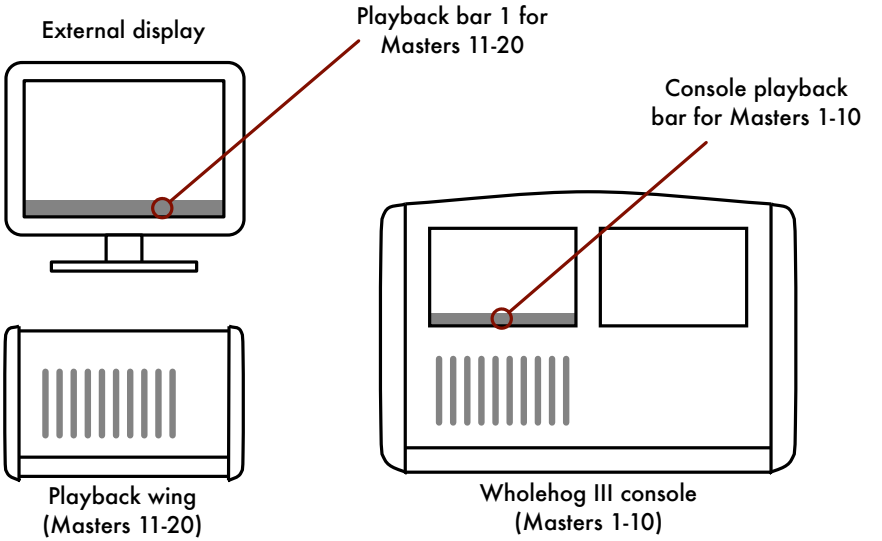


Figure 12.11. Docking Playback Bars with wings and external displays

3. Attach the wing to one of the playback bars by selecting the wing's unique ID number in the drop down menu for that playback bar.
4. If you have more than one wing, you can identify which is which by pressing the Beacon button for the appropriate playback bar. The LEDs on the wing will flash.
5. Ensure that the playback bar is visible by selecting its Display button.

12.5.1 Removing Playback Wings

To remove a wing, simply unplug its USB connection. The Playback Bar will continue to be displayed until you hide it (by deselecting its Display button in the Wings pane of the Control Panel); this allows you to continue to program without the wings attached.

If you remove a playback wing while cuelists, scenes or groups are loaded onto the masters, then the console will treat them as if their fader was at full. If you wish to bring the fader level to zero without reconnecting the playback wing, you can do this using the Virtual Faders pane of the User Preferences window (see *Figure 12.13, "The Virtual Faders pane of the User Preferences window"*):

- Setup → Preferences → Virtual Faders

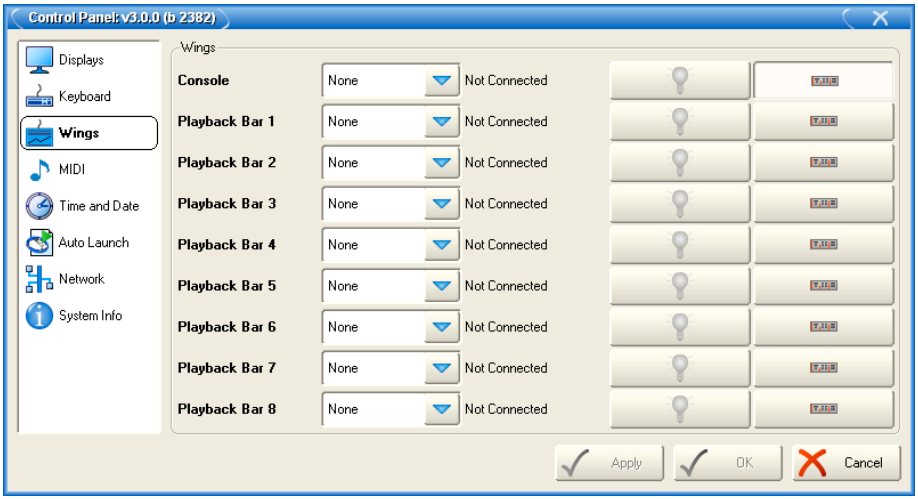


Figure 12.12. The Wings pane of the Control Panel

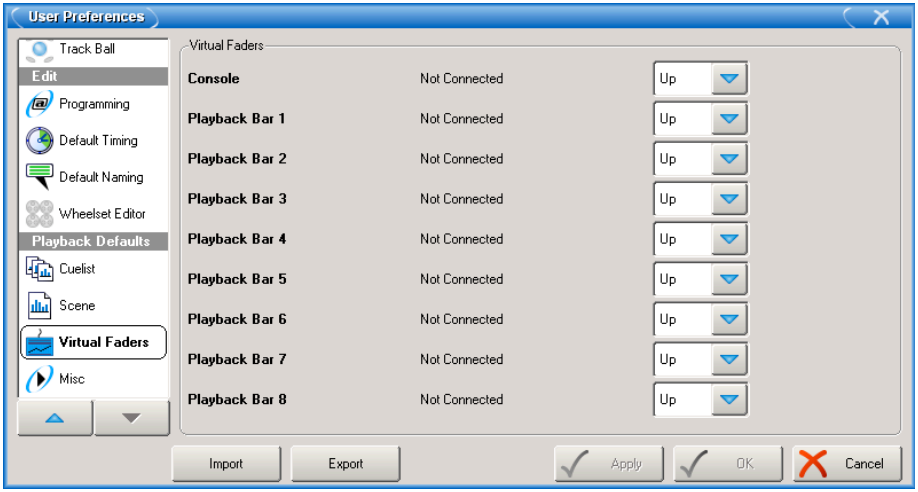


Figure 12.13. The Virtual Faders pane of the User Preferences window

12.6 Expansion Wings

The Wholehog full sized Expansion Wing is a USB device with 40 masters (20 with faders and 20 faderless). LCD screens display Playback Bar information for assigned cuelists, scenes, and groups. The Expansion Wing connects in the same manner as any playback wing; see *Adding Playback Wings (p.93)*.

12.6.1 Configuring Expansion Wings

The Wholehog Expansion Wing's LCD contrast, backlight, desklight, and LED settings can be adjusted directly on the wing through the Expansion Wing Configuration menu. You can display the Configuration Menu directly using the front panel of the Expansion Wing:

1. Press and hold Pig + Enable on the Expansion Wing. The bottom left LCD will display the Configuration Menu and all the LEDs on the console will illuminate.
2. Adjust the faders below each item to configure the setting.
3. Release Pig + Enable to exit the Configuration Menu.

All Expansion Wing Configuration settings will be retained with the Expansion Wing until they are adjusted again.

12.6.2 Using the Expansion Wing

The center section of the Expansion Wing has most of the same keys as the central controls on the console. The top key of this section is labeled Enable. This key will turn on and off the central playback controls and Choose keys for the Expansion Wing. This functionality allows use of the individual master Go, Halt/Back, and Flash keys without worry about accidentally overriding the chosen master. The Enable key will illuminate its LED in green when the keys are enabled and red when disabled.

The rest of the keys and faders on the Expansion Wing behave the same as masters on the console. You can configure the virtual fader level of the 20 faderless masters on the top of the Expansion Wing in the Virtual Faders pane of the User Preferences window:

- Setup → Preferences → Virtual Faders

See *Figure 12.13, "The Virtual Faders pane of the User Preferences window"*.

Section 13: Using the Console

13.1 Basic Concepts

The Wholehog Operating Software has two methods for entering information into the console: the **command line** and the **graphical user interface** (GUI) on the touch screens. Many of the most common operations on the console can be done in more than one way, and as you become familiar with the Wholehog OS you will develop your own preferred methods.

13.1.1 The Graphical User Interface

The Wholehog OS graphical user interface is generally similar to that found on Windows and Macintosh personal computers, with each section of the console (Programmer, Output display and so on) displayed in a window which can be placed anywhere on the touch screens or external displays. The key features of the GUI are:

- You can work with on-screen controls and windows using the touch screen or through a pointer controlled by the built in Trackball, or an external mouse. Left-clicking the mouse is the same as touching the screen and is used for selecting or activating controls, while right-clicking brings up a context-sensitive range of menu options.
- The Soft Keys adjacent to the touch screens provide another method of accessing functions, changing to match whichever **toolbar** is docked along that edge of the screen.
- The graphical environment is highly customisable, giving you complete control of the console and individual window layout. For example, you can rearrange column headers in list windows (e.g. the Cuelist and Programmer windows) to prioritise information that is most pertinent to a specific show or user. Information displayed can also be sorted or filtered. When a user logs out these preferences and settings are stored, and retrieved again on logging in.

13.1.2 Using the Touch Screens

You can use your finger on the touch screens in the same way that you use a mouse; pressing the touch screen is equivalent to a mouse click. You can also use an eraser-tipped pencil or a PDA stylus, which can feel more precise than a finger.

If the touch screens are sluggish or make inaccurate selections, you can fine tune them by adjusting the *Calibration (p.66)*.

Tip

You can keep your eraser-tipped pencil, and other useful knick-knacks, under the arm rest at the front of the Wholehog III console.

13.1.3 Modifier Keys

Modifier keys may be depressed simultaneously with other keys on the console to extend their functions; they work in a similar way to a Shift or Control key on a personal computer. The Open, Delete, Backspace, Set, Cue and Move keys are sometimes used as modifiers, while the Pig key is always a modifier key; see below.

In the User Manual, the use of modifiers is show by:

- Open + Fixture : hold down the Open key and press the Fixture key.

The Pig Key

Most of the Wholehog OS modifier keys have functions that relate to particular tasks, but the Pig key is a general-purpose modifier, which is context-sensitive. It usually provides more advanced functions such as fine control with the parameter wheels, or a visual cut and paste with the Delete and Copy keys. For example:

1. Pig + I-Wheel : Changes wheel to proportional intensity mode.
2. Pig + Record : Pastes information into the selected location.

Pig Key Commands (p.399) has a full list of commands that use the Pig key.

13.1.4 Undo and Redo

The Undo button is on the Main Toolbar at the bottom of the right touchscreen. Similar to the undo command found in computer applications, the undo function works back through the last commands entered by the user, undoing them, each time the button is pressed. Its application is global, working back through operations in chronological order, and you can go back all the way to the point at which you logged on to the console (generally, this is when you started the console up).

Pressing the Pig button, together with the Undo button, will redo the last undone action. Again, if you have gone back through several undos, you can redo repeatedly until you get back to the most recent action.

What You Can and Can't Undo

The undo and redo feature works on your show data, but generally not on other things. Undo is not available for:

- Changes to the fixture selection in the Programmer. However, the selection may change as a side effect of an undo action.
- Changes to Control Panel settings, and other things not directly related to your programmed show.
- Changes to window positions and views, and the like.

If undo is not available, you will always be asked to confirm important changes before they take place.

13.2 Working with Windows

13.2.1 Opening Windows

Windows can be opened in four ways:

- **From a Toolbar:** Some windows may have a dedicated button that can be pressed; the Programmer, for example.
- **With the Open Key:** To open a window using console keys, hold down Open and press the window's associated key or button. For example:
  - Open + Position : opens the Position Directory window.
  - Open + List : opens the Cuelist Directory window.
  - Open + Choose : opens the Cuelist window for the chosen master.

  You can also hold down the Open key to gain access the second level of the main toolbar with buttons for many of the console's windows, such as the Output and Parked windows.
- **From the Command Line:** You can specify the window to be opened using the command line, and then press the Open key. For example:
  - Position **5** Open : opens the editor window for Position Palette 5.
  - Cue **4** / **8** Open : opens the editor window for Cue 8 in the cuelist on Master 4.

- **Double Pressing Keys:** You can also open some windows by double-pressing the appropriate key:
    - Position, Position : opens the Position Directory window.

Tip

If you prefer not to use the double-press shortcut to open windows, then assign the double-press time to zero to disable it: see *Keys and Buttons (p.71)*.

13.2.2 Closing Windows

Windows can be closed using the window's Close button (marked with a cross, at the right hand end of its title bar), by pressing Open + Backspace, or with the Close button ☒ on the Window Control Toolbar.

13.2.3 Fronting, Resizing and Moving Windows

You can open as many windows as you wish, but you can only work in one at a time. To work in a window make it the frontmost by clicking or pressing the touch-screen within it, or use the Focus button on the Window Control Toolbar. The window's title bar will become bright blue to show that the window is frontmost; otherwise it is dark blue.

Windows and toolbars can be placed any where within the console's internal touch-screens, or on the (optional) external displays.

You can move and resize windows using keys and buttons, or by using the mouse or trackball.

Using Keys and Buttons

The Window Control Toolbar sits at the top of the right-hand touch screen, and provides a quick and easy way to manipulate windows; see *Figure 13.1, "The Window Control Toolbar"*. Its functions are also available as key shortcuts.

Figure 13.1. The Window Control Toolbar

Button	Function	Shortcut
	Page Up, Page Down, Page Left and Page Right scroll the currently selected window. The cursor isn't moved.	Open + (cursor key)
	Split creates a copy of the selected window. This is helpful when you need to view two parts of the same window at once.	Open + (slash)
	Size rotates through a range of set positions and sizes for the selected window within its current screen. The options are full screen, and top, bottom, left and right half and quarter screens. Holding down the Pig key while pressing Size rotates through the options in the reverse order.	Open + (plus) or (minus)
	Move Screen moves the selected window between touch-screens and external displays.	Open + @
	Maximise toggles the size of the currently selected window between full screen and its previous size.	Open + Full
	Focus switches between windows in turn, bringing each to the front.	Open + Thru
	Lock stops the positions and sizes of all windows being changed by the Trackball or mouse (but not the toolbar buttons). Press again to unlock.	Open + .
	Close closes the frontmost window.	Open + Backspace

Using the Mouse or Trackball

To move a window, click and hold on the window's top status bar whilst dragging it to its new position. To move a toolbar click and hold its left-hand edge and drag to its new position.

Windows can be resized by clicking and holding on corners until the resize arrow appears. You can then drag the corner to make the window bigger or smaller.

Note that you can only use the mouse or Trackball to move and resize windows if you have unlocked them with the Lock button on the Window Control Toolbar. Keeping the windows locked is useful when using the touch screens, so that you do not accidentally drag or resize windows with their title bars or borders. You can still move and resize windows with the buttons on the toolbar.

13.2.4 Scrolling Window Contents

When a window's contents is too great to fit inside the window, scroll bars appear along the right and bottom edges of the window. You can scroll by pressing or clicking and then dragging on the scroll bar's slider, or by pressing or clicking on the arrows at the ends of the scroll bar.

In addition, you can scroll window contents by holding down the Open key and using the Trackball, I-Wheel or parameter wheels to scroll.

13.2.5 Desktop Views

Figure 13.2. The View Toolbar

Desktop views allow you to store arrangements of windows for quick access so you do not have to re-open and re-arrange windows to perform specific tasks. For example, you could create a programming view that shows the group, palette and effects directories along with the Programmer window. A playback view could display the cuelist and scene directories, and the Output window.

Desktop views are managed by the View Toolbar at the top of the left-hand touch screen (see *Figure 13.2, "The View Toolbar"*) and the Views Directory (see *Figure 13.3, "The Views Directory"*). You can open the Views Directory by holding down the Open key and pressing the View button on the View Toolbar.

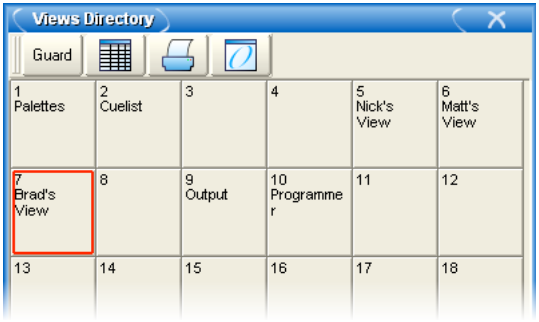


Figure 13.3. The Views Directory

Tip

When you create a new show, it automatically contains desktop views for palettes, cuelists, output and the Programmer.

Recording a Desktop View

To record a desktop view using the View Toolbar:

1. Arrange the console's windows as you want them stored in the desktop view.
2. Hold down the Record key and press one of the numbered buttons on the View Toolbar.

Naming a Desktop View

To name a desktop view using the View Toolbar:

1. Press the Set key together with the appropriate button on the View Toolbar. The Quickname window will open.
2. Enter a name, and click on OK.

To name a desktop view using the Views Directory:

1. Open + View : opens the Views Directory.
2. Select the button for the view you want to name. Make sure that the Guard button is depressed, otherwise you will activate the view instead of just selecting it.
3. Press the Set key. The Quickname window will open.
4. Enter a name, and click on OK.

Tip

You can also assign view names, and add comments to them, in the spreadsheet view of the Views Directory. See *Desktop View Options (p.103)*.

Recalling a Desktop View

You can recall desktop views in two ways:

- **With the View Toolbar :** located at the top of the left hand screen. The views each have their own button, and are loaded in pages of ten onto the toolbar. You can load the next page by pressing the Next button at the right hand end of the toolbar, while Pig + Next loads the previous page.
- **With the Views Directory window:** press the view's button in the Views Directory window. Make sure that the Guard button is not depressed, otherwise you will only select the view, rather than activating it.

Desktop View Options

By default, when you recall one desktop view it replaces the previous one, so that all windows not part of the new view are closed. However, you can set views so that they are additive instead:

1. Open + View : opens the Views Directory.
2. Select the directory's spreadsheet view; see *Working with Directories (p.108)*.
3. Select the view's cell in the Additive column.
4. Press the Set key to toggle between Yes and No.

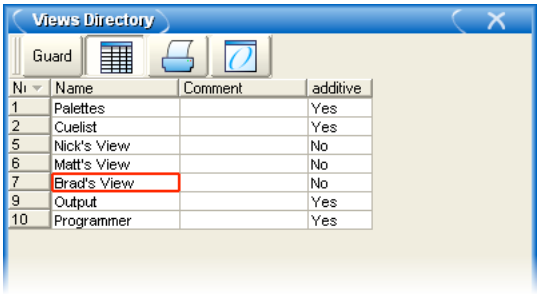


Figure 13.4. The Views Directory in Spreadsheet View

Deleting a Desktop View

To delete a desktop view using the View Toolbar:

1. Hold down the Delete key and press the appropriate button on the View Toolbar.
2. Press OK to confirm.

To delete a view using the Views Directory:

1. Open + View : opens the Views Directory.
2. Check that the directory's Guard button is depressed, so that you can select buttons within the directory without activating them.
3. Press the appropriate directory button and then the Delete key.
4. Click OK to confirm the delete.

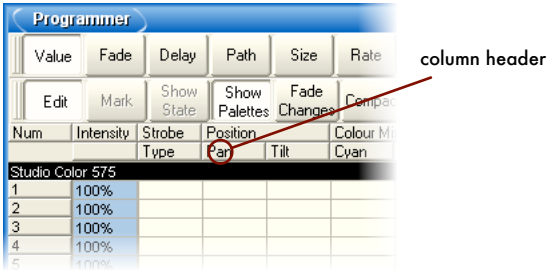
Tip

If you prefer not to be asked to confirm the delete action, select Don't Ask Me Again in the confirmation window. You can reenable the confirmation by going to Setup → Preferences → Programming and selecting Confirm before deleting directory items.

13.3 Working with Spreadsheets

Many windows on Wholehog OS show information such as **parameter** values, timings, and so on in a spreadsheet-style display. These all work in the same way:

- **To resize a column:** Place the cursor over the right-hand edge of the column header. The cursor will change to a double-ended arrow. Click and drag to resize the column.



- **To move a column:** Click and drag on the column header.
- **To hide a column:** Right-click on the column header, and choose Hide.
- **To show a hidden column:** Right-click on a column header, and choose the name of the column from the menu.
- **To sort the spreadsheet:** Right-click on a column header and select Sort to sort the spreadsheet by the values in that column. Select Sort again to the reverse the direction of the sort. You can also right-click on a column header and select Sub-sort to assign a second level of sorting. For example, if you sort the Fixture window by fixture type, and sub-sort by Patch, then all the Desk Channels will be shown grouped together, in the order of their patch address.
- **To select all the cells in a column:** Double-click on the column header at the top of the spreadsheet.
- **To select a cell:** Click or press in the cell. You can use the cursor keys below the Trackball to change which cell is selected. If the cell is editable, it will have a red border.
- **To select a range of cells:** You can click or press and then drag across a range of cells to select them all. Alternatively, you can click in the first cell, press and hold Thru, and click in the last cell; this is useful if you want to select a large range and need to scroll the window.
- **To edit the contents of cells:** Click or press in the cell and press the Set key, or double-click in the cell. Type in the new value, and press Enter. This works for both a single selected cell and a range. Cells that are editable have a red border when selected.

13.3.1 Compact Mode

In editor windows such as the Programmer, you can use compact mode to save space and get more information onto the screen without having to scroll; see *Figure 13.5, "A spreadsheet with and without Compact Mode"*. In compact mode, fixtures only have columns for the actual parameters that they have, rather than for all the parameters of any fixture in the editor. The console uses the display space more efficiently by having multiple columns for fixture types with few parameters, such as desk channels.

You can toggle compact mode on and off with the Compact button in the window's toolbar.

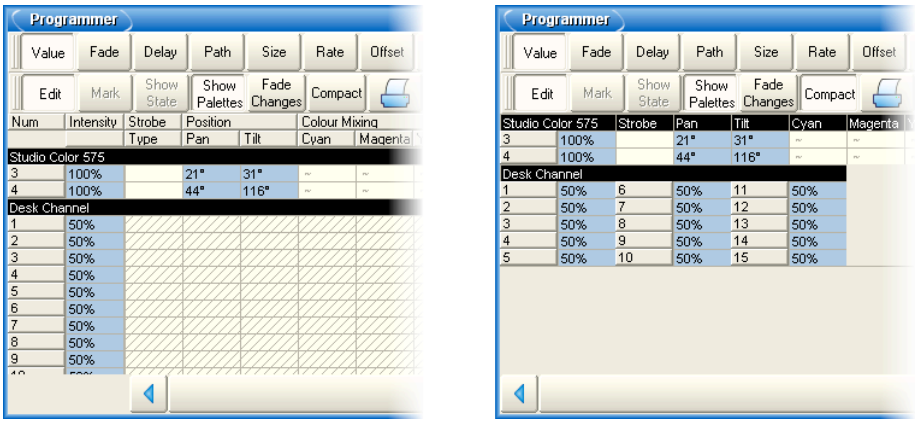


Figure 13.5. A spreadsheet with and without Compact Mode

Note that you cannot sort a spreadsheet that is in compact mode.

13.3.2 Aggregation

In windows such as the Programmer, it is often useful to keep fixtures of the same type together; this is known as 'aggregation'. The spreadsheet effectively becomes a list of fixtures in fixture type order, with headings in the list separating each fixture type; see *Figure 13.6, "A Spreadsheet with Aggregation Turned On"*.

To use aggregation:

1. Make sure the spreadsheet is sorted by Fixture Type: right click on the Type column and select Sort. If the Type column isn't visible, right click on any column heading and select Type.
2. Press ⍰ to open the Configuration window.
3. Select Enable Aggregation.
4. Click on OK.

Note that aggregation is always on if the spreadsheet is in compact mode; see *Compact Mode (p.105)*.

Tip

Aggregation is turned on by default in all editors, such as the Programmer.

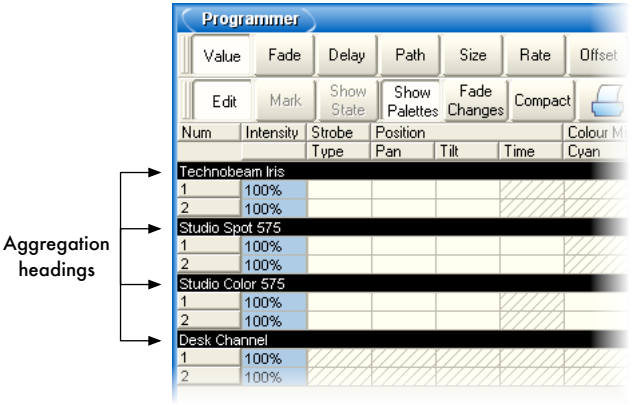


Figure 13.6. A Spreadsheet with Aggregation Turned On

Collapsing Aggregated Sections

You can collapse aggregated sections to hide all the rows in that section; see *Figure 13.7, "An Aggregated Spreadsheet With Collapsed Rows"*. To collapse an aggregate section, right click the black heading bar and select Collapse.

To expand the aggregation section again, right click the section's black heading bar and select Expand.

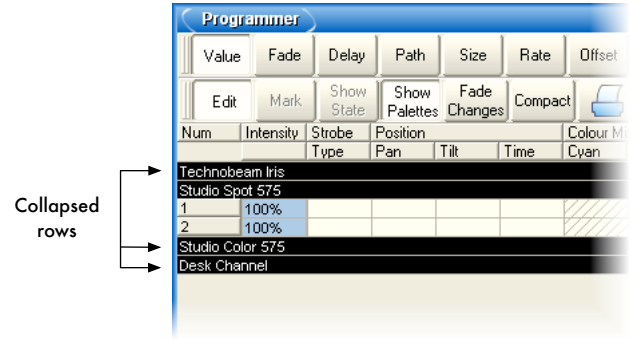


Figure 13.7. An Aggregated Spreadsheet With Collapsed Rows

Priority of Aggregated Sections

You can change the position of an aggregation section in the list by altering its priority. Raising a section's priority will make it appear nearer the top of the spreadsheet.

To move an aggregate row up or down in priority, right click the section's black header bar and then select Raise Priority or Lower Priority.

Jumping Between Aggregated Sections

You can quickly bring aggregated sections into view using the Jump Toolbar located on the upper right of a spreadsheet window, see *Figure 13.8, "The Jump Toolbar"*. This has a button for each aggregation section; clicking a button will scroll the list to bring the section into view.

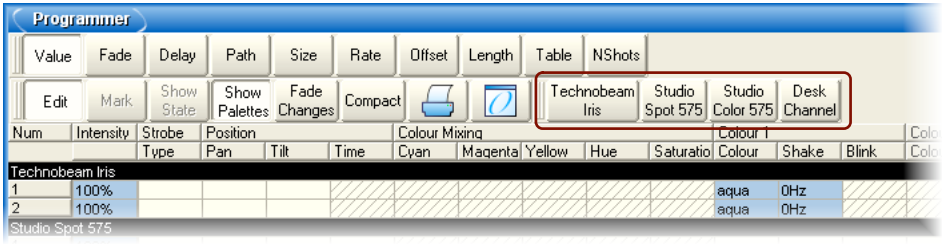


Figure 13.8. The Jump Toolbar

To enable the jump toolbar:

1. Press to open the Configuration window.
2. Select Enable Jump Toolbar.
3. Click on Apply.

Tip

The jump toolbar is turned on by default in all editors, such as the Programmer.

13.3.3 Cut, Copy and Paste

You can copy and paste the contents of selected cells:

- Right-click, and select Copy or Paste from the contextual menu.

Or:

- Pig + Copy : copy.
- Pig + Record : paste.

13.4 Working with Directories

Directory windows give you quick access to groups, palettes, scenes, cuelists and so on, and they all work in essentially the same way.

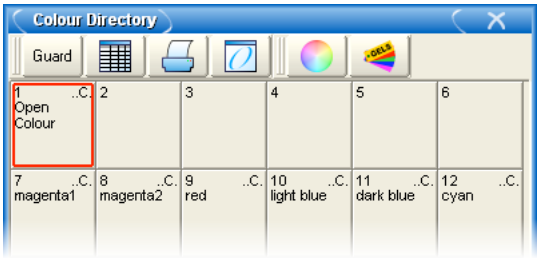


Figure 13.9. A Typical Directory

Figure 13.9, "A Typical Directory" shows a typical directory. The main part of the window is filled with large buttons, used to access the group, palette, scene, cuelist or page, as well as displaying their names and some other key information:

Display	Applies To	Description
. . C .	Palettes	Shows the parameter types recorded in the palette. I = intensity, P = position, C = colour, B = beam, E = effect, T = time. See *Recording with Specified Masking (p.194)*.
DIR	Palettes	The palette is a direct palette. See *Direct Palettes (p.197)*.
REF	Palettes	The palette contains references to other palettes. See *Reference Palettes (p.196)*.
HI	Palettes	The palette is the Highlight Palette. See *Customising Highlight (p.204)*.
LO	Palettes	The palette is the Lowlight Palette. See *Customising Highlight (p.204)*.
C	Cuelists	The cuelist is a chase. See *Using a Cuelist as a Chase (p.286)*.
TC	Cuelists	The cuelist has timecode active. See *Working with Audio, MIDI and Timecode (p.317)*.
EC	Cuelists	The cuelist has clock triggers that are enabled. See *Clock Triggers (p.238)*.
T	Pages	The page is the template page. See *The Template Page (p.310)*.
RA	Pages	The page has a Restore Activity macro defined. See *Restoring Activity When Changing Pages (p.306)*.

You can rename the selected button (with the red border) by pressing the Set key. You can also hold Set and press any button to rename it.

At the top of the window there are four buttons common to all directories:

	Switches to a spreadsheet view, allowing you to edit attributes of the items in the directory such as their names. See *Working with Spreadsheets (p.104)* and *Figure 13.10, "A Typical Directory in Spreadsheet View"*.
	Reports. This allows you to print the contents of the window.
	Configure. This allows you to control various aspects of how the directory window displays information.
Guard	When this is depressed, pressing the directory's buttons does not activate them. Instead it selects the item and inserts it in the command line.

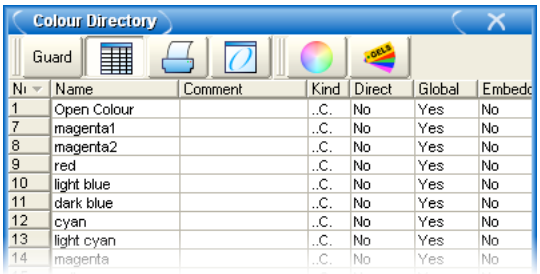


Figure 13.10. A Typical Directory in Spreadsheet View

Tip

You can override the effect of the Guard button by holding down the Pig key while pressing a directory button.

13.4.1 Automatic Naming of Directory Items

When you create or copy a directory item, the console automatically generates a name for the new item. For example, if you have two position palettes and them create a third, the new one will be recorded into location 3 in the directory and named 'Position 3'. If you then copy this position palette, the copy will be recorded into location 4 in the directory and named 'Copy of Position 3'.

You can customise how the console automatically generates these names in the Default Naming pane of the User Preferences window; see *Figure 13.11, "The Default Naming pane of the User Preferences window"*. To open the Default Naming pane:

- Setup → Preferences → Default Naming

To customise the generated labels:

1. Click or press on the text box for the required type of directory (group, intensity, position, and so on). Labels for when the new directory item is created by recording or by copying are handled in separate text boxes.
2. Set, **`[new label text]`**, Enter : type in the label you want.

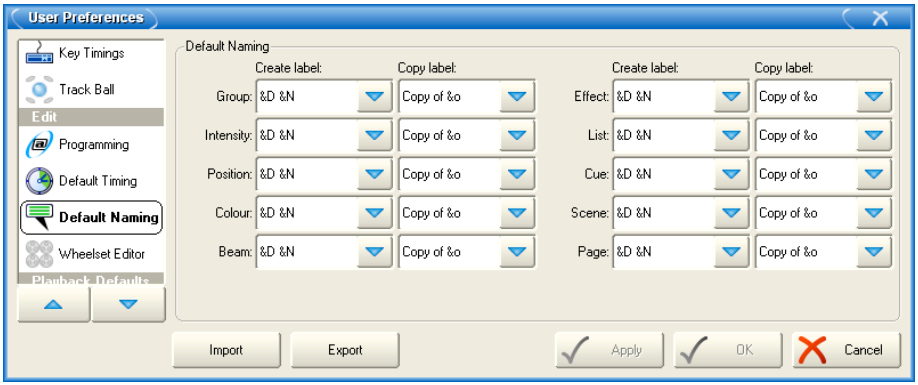


Figure 13.11. The Default Naming pane of the User Preferences window

3. Alternatively, click or press on the arrow at the right hand end of the text box to get a list of useful labels. Click on the one you want.

You can use special tags to have the console insert text into the name for you, according to the directory name and the location in the directory:

- **&d:** the directory name
- **&D:** the directory name (dynamic)
- **&n:** the directory number
- **&N:** the directory number (dynamic)
- **&o:** the original text. This is used when a directory item is copied; the original text is the name of the item that has been copied.

Lowercase tags are resolved once only, when the name is applied, while uppercase tags remain unresolved until the name is displayed (known as 'dynamic'). So, pressing Set and entering the name of colour palette 3 as '&d &n' will assign the name to be 'Colour 3'. If you assign the name to be '&D &N', the name will also be assigned to 'Colour 3'. The difference is that moving this palette to position 4 will automatically correct the name to 'Colour 4'.

13.5 Working with Editors

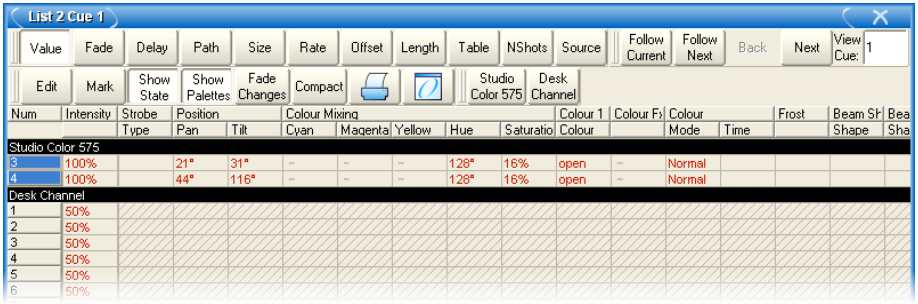


Figure 13.12. A Typical Editor

Editors are windows where you can view and assign the parameter values of fixtures. There are editors for cues, scenes and palettes, and the **Programmer** is also an editor. Editing parameter values works in essentially the same way for all of them; see *Selecting Fixtures, Modifying Parameters (p.155)*.

You can open an editor window for any cue, scene or palette by holding down the Open key and selecting it from its directory window. Alternatively, you can use the command line:

- Cue **1** Open : opens an editor for Cue 1 and makes it editable.

13.5.1 Editor Window Controls

The main part of an editor window shows the fixture parameter values in a spreadsheet view, with each row representing a single fixture; see *Working with Spreadsheets (p.104)*.

At the top of the window there are three toolbars with buttons: the Editor Values Toolbar toolbar, the Editor Toolbar, and the Jump Toolbar. The following sections describe the buttons that are common across all editors; some editors have additional buttons that are specific to that type of editor, and these are described in the relevant part of the manual.

The Editor Values Toolbar

The Editor Values Toolbar has buttons for: Value, Fade, Delay, Path, Size, Rate, Offset, Length, Table, and N Shot. Use these buttons to display the different kinds of information associated with the fixture's parameters; see *Working with Fade Timings (p.226)*.

The Editor Toolbar

The Editor Toolbar has the following buttons:

Button	Purpose
Edit	Press this to make the contents of the editor editable, rather than just to view it. Instructions given to the command line, or using the parameter wheels and I-Wheel, are directed to the editable editor.
Show State	In cue editors, press this to see all the parameters that will appear on stage, including those that have tracked through from earlier cues in the cuelist. With Show State deselected, only the hard values actually recorded in the cue are displayed.
Show Palettes	Press Show Palettes to see the palette name, rather than the parameter value; see *Working with Palettes (p.187)*.
Fade Changes	Press this to have parameter values changed in this editor fade rather than snap onto stage; see *Fade Changes (p.206)*.
Compact	Press this to toggle compact mode on and off. Compact mode fits more information into the editor without having to scroll. However, the column for a particular parameter won't necessarily be aligned across different fixture types, so sorting is not possible.
	Reports. This allows you to print the contents of the window.
	Configure. This allows you to control various aspects of how the editor window displays information.

The Jump Toolbar

The Jump Toolbar has a button for each type of fixture currently in the editor, allowing you to quickly jumpt to the parameter values for that type of fixture. The Jump Toolbar only appears if aggregation is turned on; see *Aggregation (p.106)*.

13.5.2 Changing Parameter Values in the Editor

To make changes to the contents of an editor, you need to have its Edit button selected. You can have up to eight editors open, but only one can be editable at a time, and the parameter wheels, I-Wheel and command line all operate on the contents of the currently editable editor. If you have several editors open at once, you can use the Edit button to determine which one you are controlling (even if it is not the frontmost window) or to 'lock' the editor to prevent accidental changes.

Tip

When you open an editor, all the fixtures within the editor are automatically selected. This aids quick editing of cues or palettes.

After you have finished editing a cue, scene or palette, press the Update key to apply changes. Until you do this, changes won't show up if you run the cue or scene, or use the palette. The exception to this is when you are working in the Programmer, when the Update key will perform the Auto Update function; see *Auto Update (p.204)*.

If you hold down the Update key, the Update Toolbar will appear. This allows you to select which parameter types are recorded, whether changes should track forwards,

and whether references should be allowed when recording palettes. See *Stopping Values from Tracking Forward (p.219)* and *Reference Palettes (p.196)*.

If you close the editor without updating, you will be asked whether you want to save or discard the changes, or cancel the closing of the editor.

Tip

The name of the current editable editor is shown in the Command Line Toolbar; see *Figure 13.13, "The Command Line"*. By default, it is the Programmer. The name of the item being edited appears in the title bar of the editor window.

13.6 Using the Command Line

Wholehog OS has two fundamental approaches to programming: one uses an on-screen, graphical approach, while the other uses a command line. The graphical approach is easy to learn because you can see the available options on screen, but tends to be slower. The command line is harder to learn because you have to learn the commands, but it is faster once you know it and it allows you to do complex operations in a single action. Often, you can combine elements of the two approaches.

Figure 13.13. The Command Line

The commands that you enter appear in the Command Line Toolbar at the bottom of the right-hand touch-screen; see *Figure 13.13, "The Command Line"*. You build up a command as a series of keystrokes, and the command is acted on when you press Enter. You can use the Backspace key to delete each part of the command in turn if you make a mistake typing it in. A double-press of the Backspace key will clear the whole command line.

The command is sent to the currently editable editor; press Edit in an editor window to make it the editable editor.

13.6.1 Command Line Syntax

The commands for editing show data all use a common syntax structure. The key to mastering the command line is realising that the syntax is the same for different commands, and different types of show data.

The basic structure is: Source, Mask, Command, Options, Destination.

- **Source:** The source is the object within the show that you want to take data from. It might be a palette, scene, cue, or the editable editor. With most commands the source object is not modified.

- **Mask:** The Mask is a filter for when you only want some of the data from that object. There are two types of mask: a fixture mask specifies only data for certain fixtures (for example Cyberlight 1); a kind mask specifies only data for certain kinds (for example Colour, Beam). If no mask is specified then the default mask for the command and destination is used; this will often be the entire object.
- **Command:** The Command is the operation you want to perform. Commands include Copy, Record, Delete, Move, Merge, Knockout. Some of these only need a source to be specified, others only need a destination, but they all have the same syntactical form.
- **Options:** The behaviour of some commands (for example Record) can be altered with options. These usually appear on a popup toolbar once the command key is pressed.
- **Destination:** The destination is the object that will be affected by the command. Again it might be a palette, cue, scene or the editable editor. If the destination already exists, and the action to take is unclear, then you will be asked what the console should do.

Some examples of the command line syntax are shown below. Note that the final press of the Enter key required to tell the console to implement the command has been omitted for clarity.

Source	Mask	Command	Options	Destination	Comments
		Record		Position **1**	Records a position palette to location 1 in the position palette directory. No source is given, so the content of the current editor is assumed.
		Record	Replace	Position **1**	The Replace option (on the Record Options Toolbar) ensures that the new palette replaces the previously recorded palette.
Position **1**		Copy		Position **2**	The Copy command takes the Position 1 palette as its source.
Position **1**		Move	Replace	Position **2**	This example combines using a source and a record option.
	Group **2**	Record		Position **3**	Here Group 2 acts as a mask for the record command, so that only fixtures in Group 2 are recorded into the Position 3 palette.
Cue **1**	Group **3**	Copy	Position	Cue **5**	Here the parameter values of fixtures in Group 3 are copied from Cue 1 to Cue 5. The Position option applied to the copy command means that only position parameters are included.

The important thing to understand is that the command line follows a standard syntax, with the various parts in a particular order. Knowing this, you will be able to extend the many examples of command line syntax in this manual to do anything that you want.

Tip

The text of the command line turns red if your syntax is not valid.

13.6.2 The Status Bar

To the right of the command line is the Status Bar; see *Figure 13.14, "The Status Bar"*.

Figure 13.14. The Status Bar

The Status Bar gives you the following information about the status of the console, from left to right:

Description	Example
The Trackball mode	--- (pointer) POS (position) POS, ortho (ortho mode)
The name of the current page	Page 1
The current editor	Programmer Cue 3
The currently chosen master	Master 4
The network status	The network is working normally. There is a problem with the network.
The current time in hours and minutes.	16:28

13.7 Starting Up and Shutting Down

13.7.1 Starting Up

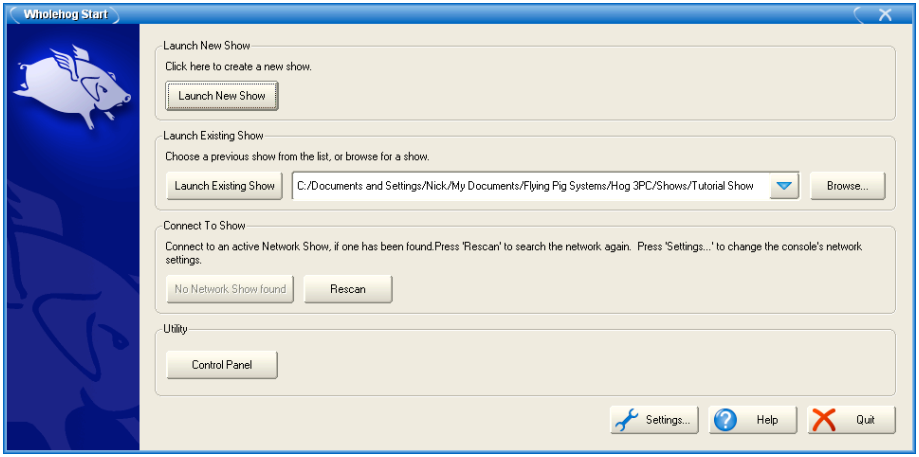

Wholehog Start
Launch New Show
Click here to create a new show.
Launch New Show
Launch Existing Show
Choose a previous show from the list, or browse for a show.
Launch Existing Show
C:/Documents and Settings/Nick/My Documents/Flying Pig Systems/Hog 3PC/Shows/Tutorial Show
Browse...
Connect To Show
Connect to an active Network Show, if one has been found.Press 'Rescan' to search the network again. Press 'Settings...' to change the console's network settings.
No Network Show found
Rescan
Utility
Control Panel
Settings...
Help
Quit

Figure 13.15. The Start window

When you turn the console on the Start window will appear; see *Figure 13.15, "The Start window"*. You can choose to Launch New Show, Launch Existing Show, or Connect to Show.

Launch New Show

Selecting this will launch a new show screen and you will be asked to enter the following information:

- **A storage location:** Choose the location on the console's hard drive where you would like to store the show. You cannot choose the Zip drive or the CD-ROM as a storage location.
- **The show name:** This can be as long as you like. If you do not have a keyboard attached, press Set to open an on-screen keyboard.
- **A fixture library:** Choose the library to use as the **fixture library**. The library contains information about different types of fixtures that Wholehog OS needs. Several library versions are available for compatibility reasons - it is best always to select the newest library when starting a new show.

Tip

Rarely used fixture types are stored in the 'Uncommon' fixture library. If you are using an older or specialized fixture type you can merge them into your show from the Uncommon fixture library stored on the console. To avoid problems, merge only the desired fixtures and not the entire Uncommon library.

Launch Existing Show

Use the drop down menu to choose from a list of recently used shows and then press Launch Existing Show. Alternatively, use the Browse button to select from all available shows, including those stored on Zip or CD-ROM.

Connect to Show

To connect to a show already running on the network select it in the Connect to Show section.

If no show is displayed, and you are sure that a show is running on the network, this could be because:

- your console is on the wrong network port. Click on the Settings button and adjust the **port number**.
- your console has the wrong network settings. Press the Control Panel button on the Startup Toolbar at the bottom of the screen, and adjust the settings in the Network pane; see *Setting Up the Network (p.75)*.

When multiple consoles are working together on a show then you can identify each console with a separate number. This can also be assigned in the Settings section of the Start window.

Tip

What is the difference between launching or starting a new show, and connecting to a running one? Normally your console will start a 'show server'. When you connect to a running show, no server is started; instead you use the server of the remote console.

13.7.2 Automatically Launching a Show

You can assign Wholehog OS to automatically launch a show at startup:

1. Setup → Control Panel → Auto Launch : see *Figure 13.16, "The Auto Launch pane of the Control Panel"*.
2. Select Enable Auto Launch.
3. Choose a show file to launch.
4. Assign a delay time before the chosen show is automatically launched.

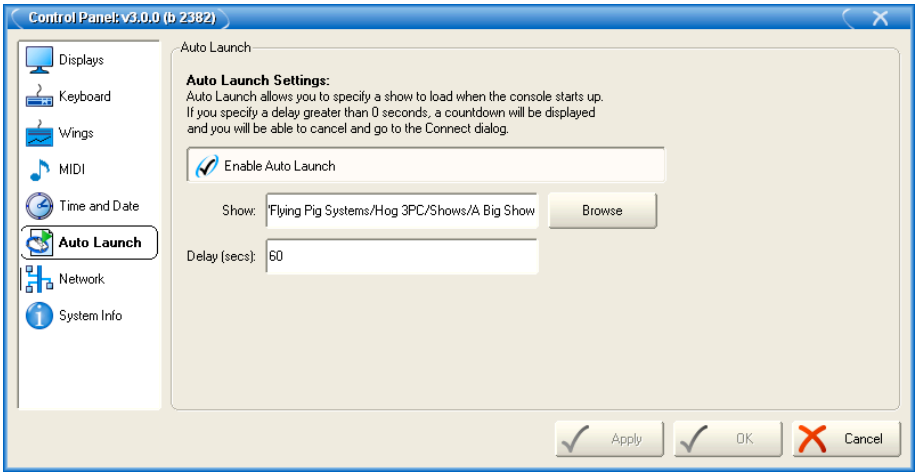


Figure 13.16. The Auto Launch pane of the Control Panel

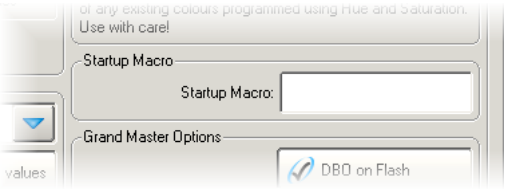
At startup, a window will tell you that the show will be launched automatically after the assigned delay; see *Figure 13.17, "The Auto Launch window"*. Click Launch Now to ignore the remaining delay and launch the show immediately. Click Cancel to return to the Start window. If you specified a delay of 0 seconds, the delay window will not be displayed.

Figure 13.17. The Auto Launch window

13.7.3 Startup Macros

You can assign a macro that is executed once the show has been launched. You can use this to automate a variety of tasks such as recalling a view, changing pages, starting cuelist playback on masters, and so on. The startup macro is assigned in the Misc pane of the User Preferences window:

- Setup → Preferences → Misc



For details of the macro syntax, see *Automating the Console Using Macros (p.329)*.

13.7.4 Restarting and Shutting Down

To shut down, select Setup → Quit. The Quit button is on the right hand end of the Setup Toolbar. The Shut Down dialog will open (see *Figure 13.18, "The Shut Down Dialog"*), with the following options:

- **Shut Down:** shutting down will turn Wholehog consoles off completely.
- **Restart Console:** restarting is like shutting the console down and turning it on again, and will take you to the Start window.
- **Log Off:** logging off will close your current desktop, Programmer and output screens, as well as closing the current show file. The console is left powered up and running, and returns to the Start window.
- **Cancel:** cancels the quit command.

In all cases your show data is automatically saved to disk.

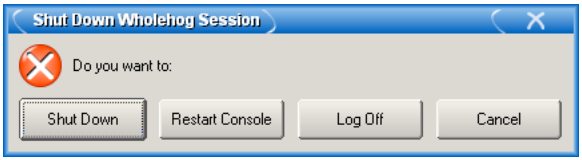


Figure 13.18. The Shut Down Dialog

13.8 Managing Show Data

Your show data is stored on the internal hard disk in the location that you chose when creating the show. Show files and folders are located in the Shows folder, and libraries in the Libraries folder.

The console saves changes to the disk as they are made, and in the event of a power failure, the battery backup will ensure that all saves are completed before shut down.

You can use the Show Manager window (see *Figure 13.19, "The Show Manager Window"*) to see the details of the shows in the console and backup, move, copy and delete them. To open the Show Manager:

- Setup → Shows

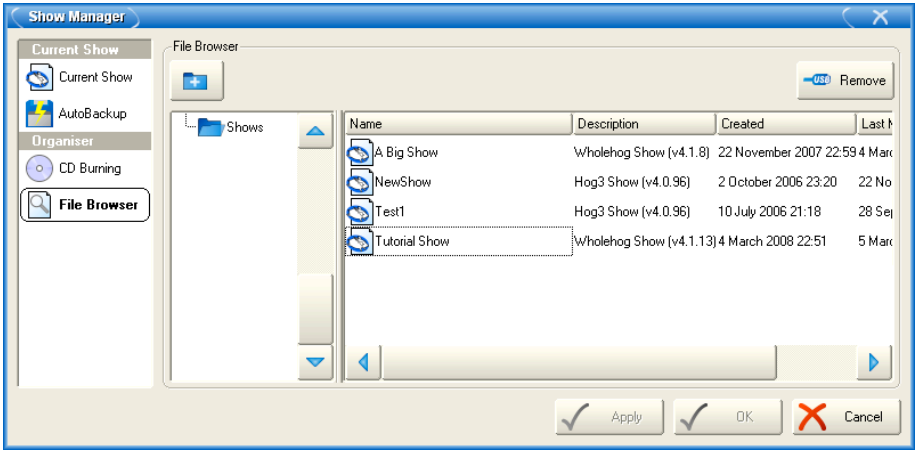


Figure 13.19. The Show Manager Window

13.8.1 Starting a New Show and Changing the Current Show

To change the current show or start a new one, log out and log in again:

1. Setup → Quit
2. Select Log Off.

3. In the Start window, either launch a new show or browse to launch an existing one; see *Starting Up and Shutting Down (p.117)*.

13.8.2 Working With Show Files

Browsing Files

You can browse and organise show files and libraries in the File Browser pane of the Show Manager window; see *Figure 13.19, "The Show Manager Window"*. On the left is a list of the main console folders and the console's Zip and CD drives. Clicking on one of these will display its contents in the right hand list.

The browser shows the name, description, and creation date and time of the file, as well as the version number of the library used to create the show in parentheses. If the show is marked as modified, then the library has been altered through a library merge.

Moving, Copying, Deleting and Renaming Shows

To move, copy or delete shows, use the File Browser pane of the Show Manager window.

To move a show file:

- Drag and drop files to destinations in the left hand folder list. Generally, you will find dragging with the mouse or Trackball much easier than using the touchscreen.

To copy a show file:

- Drag and drop files while holding down the Pig key (or the Control key on an external keyboard).

To delete a show file:

- Right-click on the show file and select Delete from the contextual menu. You will be asked to confirm the action.

To rename a show file:

- Right-click on the show file and select Rename from the contextual menu. Type in the new name and press Enter.

Tip

You can also copy and paste files by right-clicking on them and selecting Copy or Paste from the contextual menu.

Creating New Folders

You can create sub-folders in the Shows and Libraries folders to help organise your work:

1. Click on the folder you want to make a new folder in.
2. Click on the button.
3. Enter a name for the folder and press Enter.

Note that you cannot create folders on a CD-ROM.

Tip

You can also create a new folder inside an existing one by right clicking on it and using the contextual menu.

Ejecting Disks

You cannot eject a disk in the console's Zip and CD-ROM drives if they are in use. Before ejecting, make sure that you don't have the disks folder selected in the File Browser. If a disk will not eject, check that you are not browsing its contents elsewhere, and that the console is not currently accessing it.

13.8.3 Backing Up

It is good practice to backup your show regularly. You can do this manually, saving a backup copy of your show on the console's hard disk, or on a CD-ROM or Zip disk. Alternatively, you can assign Wholehog OS to make backup show files and save them to hard disk automatically at defined intervals.

Wholehog OS backup files are in a different format to normal show files. A show file actually consists of many folders and files, although usually you will not be aware of this as the console makes it appear as a single file. A backup file is a single compressed file that contains all the files and folders that make up the show data, and you should always use a backup file to transfer shows from one console to another. The console's backup function creates this type of single compressed file.

Tip

You should backup your show to external media (Zip or CD) regularly, as well as to the console's internal hard drive, so that not all of your backups are in the same place.

Making a Manual Backup

Use the Current Show pane of the Show Manager window to store a copy of your current show to another location on the hard disk:

1. Setup → Shows → Current Show
2. Press Backup.
3. Select a location. A copy of your show will be saved with '_bck' appended to its file name.

To back up to Zip disk, select the Zip disk as the location to save the file to. To back up to CD-ROM, save the backup file to the console's hard disk first, and then copy it to the CD; see *Copying Files to a CD-ROM (p.124)*.

Using Auto Backup

You can set the console to make backups automatically using the Auto Backup function. This will make an automatic backup at specified intervals, assigned to twenty minutes by default. To use Auto Backup:

1. Setup → Shows → Auto Backup : see *Figure 13.20, "The Auto Backup pane of the Show Manager window"*.
2. Press Enable Auto Backup.
3. Choose the number of copies to keep. The console will automatically delete older backups as new ones are made, to maintain the assigned number of most recent backups.
4. Choose the time between backups, the backup location, and the file name for backups.
5. Select Apply to commence Auto Backup.

The status of the automatic backup is shown at the bottom of the Auto Backup pane, with a time to the next backup, and the progress of the backup when it is being made.

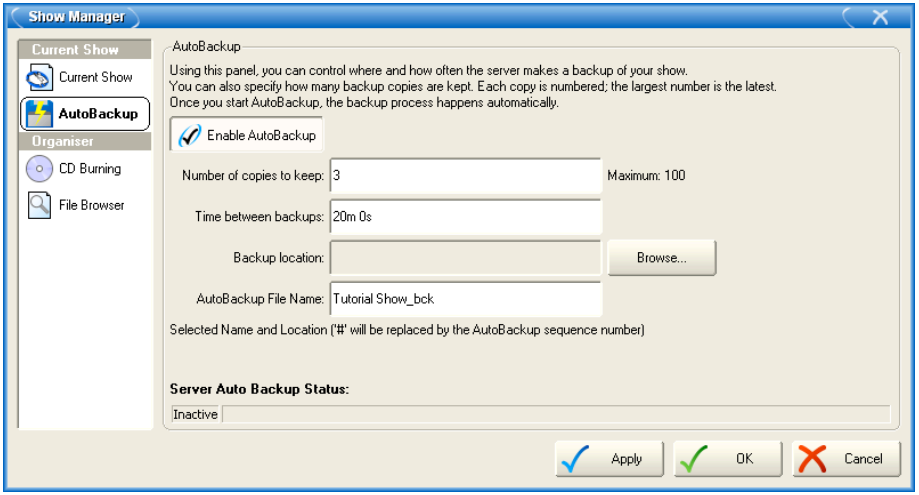

Show Manager
Current Show
Current Show
AutoBackup
Organiser
CD Burning
File Browser
AutoBackup
Using this panel, you can control where and how often the server makes a backup of your show.
You can also specify how many backup copies are kept. Each copy is numbered; the largest number is the latest.
Once you start AutoBackup, the backup process happens automatically.
Enable AutoBackup
Number of copies to keep: 3
Maximum: 100
Time between backups: 20m 0s
Backup location:
Browse...
AutoBackup File Name: Tutorial Show_bck
Selected Name and Location ('#' will be replaced by the AutoBackup sequence number)
Server Auto Backup Status:
Inactive
Apply
OK
Cancel

Figure 13.20. The Auto Backup pane of the Show Manager window

13.8.4 Copying Files to a CD-ROM

To copy shows onto a recordable CD as an archive or for transfer to another console:

1. Setup → Shows → CD Burning : see *Figure 13.21, "The CD Burning pane of the Show Manager window"*.
2. Select a file to be copied in the left-hand list, and click the Add to CD button to move it to the right-hand list. You may be asked to back up the show before adding it to the list; click OK to agree to this.
3. Repeat for all the files you want to copy to the CD.
4. Insert a recordable CD into the CD-ROM drive, located under the console's front wrist rest.
5. Press the Burn button, and then the Start Burn button in the CD Burning window. The window will show the progress of the writing operation.

Tip

You can use drag and drop to move files to the CD Master list. Note that files will always be copied, not moved.

13.8.5 Saving and Loading Your Preferences

Your settings within the User Preferences window are stored as part of the show file. This means that the settings are applied whenever the show file is launched, even if it on another console.

You can save your preference settings as a separate file, so that you can later load them into any show that you work on. To save your preferences:

1. Setup → Preferences : open the User Preferences window.
2. Click on the Export button, and select a location to save the preferences file to. You can save directly to the console's hard disk or to a Zip disk, or save to the console's hard disk for later copying to CD-ROM; see *Copying Files to a CD-ROM (p.124)*.

To load your preferences into the current show:

1. Setup → Preferences : open the User Preferences window.
2. Click on the Import button, browse to the location of your preferences files, and select a preferences file to import.

   Note that when importing, several custom preference files are stored on the console by default. These files contain custom wheelsets for many different fixture types.

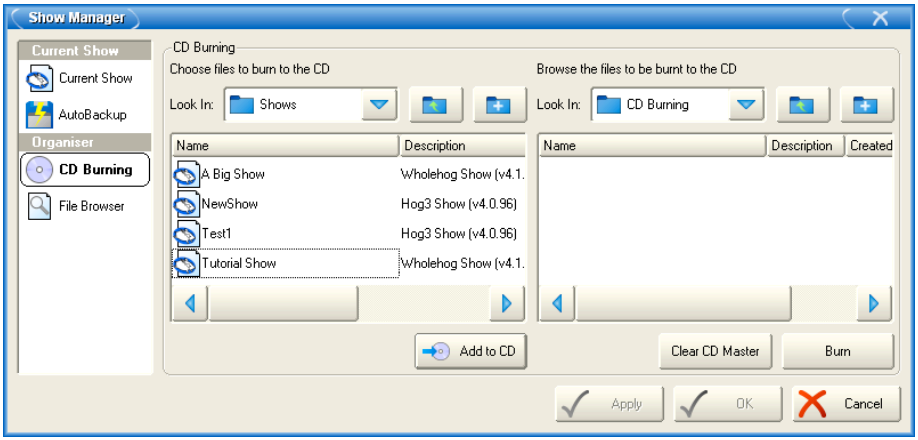


Figure 13.21. The CD Burning pane of the Show Manager window

13.9 Merging Shows

Show merging allows you to take fixture types, fixtures, and the programming associated with fixtures, from another show and merge them into your show. The show currently loaded into the console is known as the *current* show, and the show you are taking data from is called the *source* show.

You can also merge a fixture library into the current show; this is useful if you want to use an updated fixture library to take advantage of enhanced or more recent fixture definitions. If you do this, you will only be able to merge fixture types, since there are no fixtures or programming in a library file.

Important

You cannot merge information between libraries, or shows created with libraries, with different library version numbers. For example, a show created with a v2 library cannot be merged with a show created with a v3 or v4 library.

To select a show or fixture to merge:

1. Setup → Shows → Current Show : open the Current Show pane of the Show Manager.
2. Press Merge to be guided through the merge process. The Merge Show window will open; see *Figure 13.22, "The Source Location page of the Merge Show window"*.
3. Choose a source show file or library. Note that if you have chosen a backup (.bck) file, it may take a few moments for the console to recognise it, as it has to uncompress the file to read its contents.

4. Once you have chosen a show or library, you will be offered the possible merge options: Merging Fixture Types, Merging Fixtures, and Merging Programming.

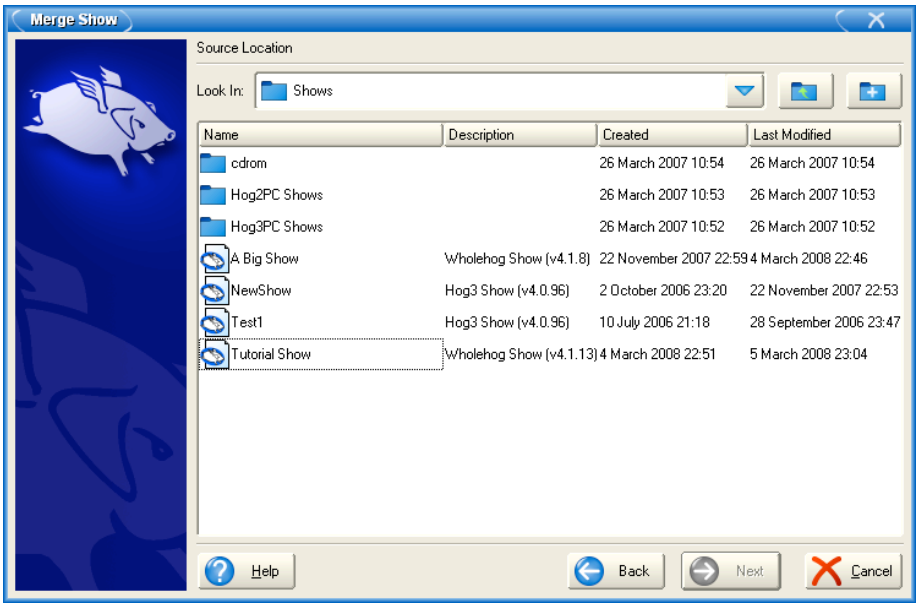


Figure 13.22. The Source Location page of the Merge Show window

Tip

If you want the latest fixture types, you can download a library file from the Flying Pig Systems website (*www.flyingpig.com*) and put it on a recordable CD or zip disk to load into the console.

13.9.1 Merging Fixture Types

Once you have selected a show or library, Wholehog OS compares the libraries and creates a list of types which have changed; see *Figure 13.23, "The Type Merge page of the Merge Show window"*.

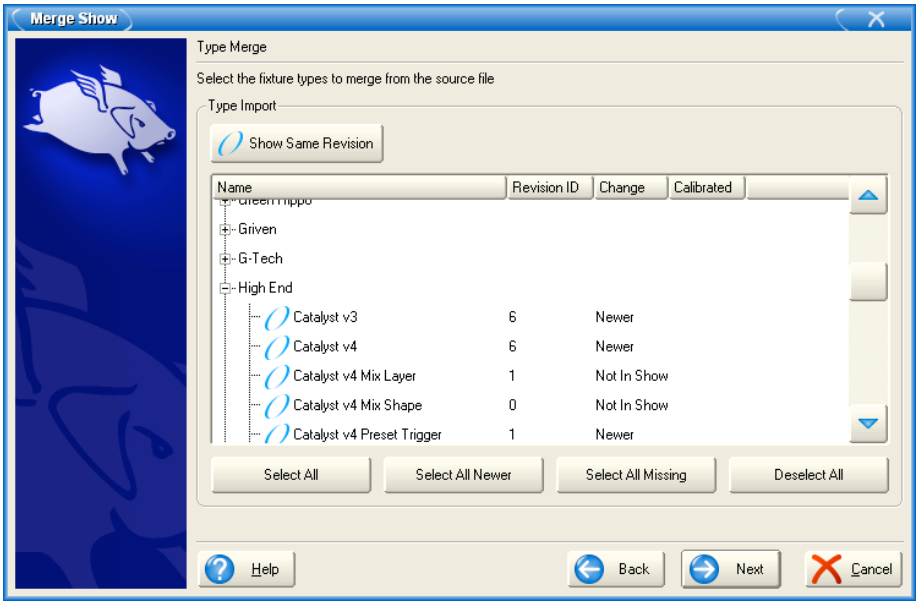


Figure 13.23. The Type Merge page of the Merge Show window

An expanding tree shows those types, and their differences:

- **Newer:** the fixture type in the source library is a newer revision.
- **Older:** the type in the source library is an older revision.
- **Not In Show:** the type is in the source library, but not the current library.

If you want to see all fixture types, rather than just the ones that have changed, press Show Same Revision.

Select the fixture types to merge by clicking on their check boxes, or by using the Select All, Select All Newer or Select All Missing buttons. The Deselect All button allows you to clear the current selection and start again. If you are merging a library, press Merge to start the merge. Otherwise, press Next to continue to merging the show data.

Tip

When merging fixture libraries, select *only* the desired fixtures and not *all* fixtures in the library or show file.

13.9.2 Merging Fixtures

After choosing to merge fixture types, you can merge the fixtures used in the two shows; see *Figure 13.24, "The Fixture Merge page of the Merge Show window"*. If you choose not to merge fixtures, you will not be able to merge any programming.

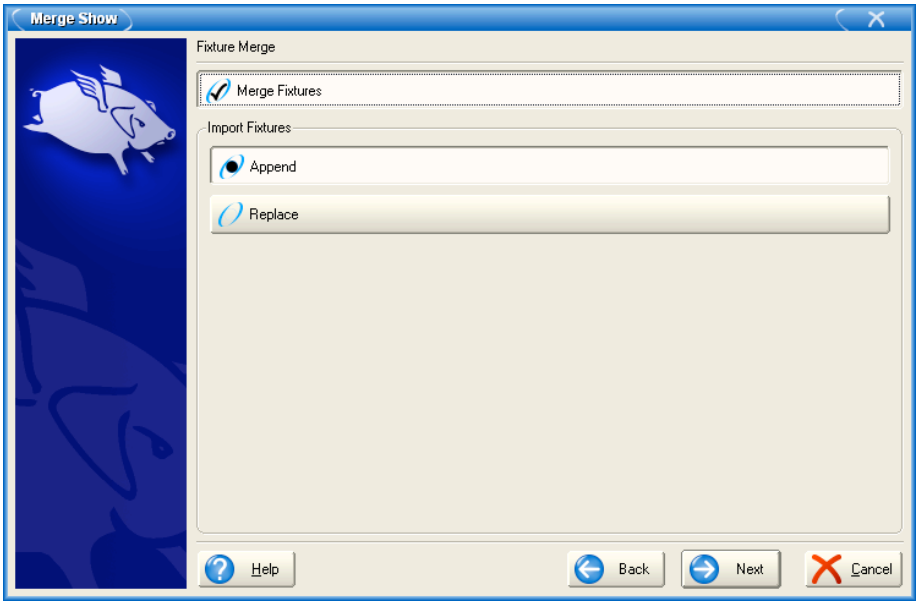


Figure 13.24. The Fixture Merge page of the Merge Show window

There are two options for merging fixtures:

Append: appending fixtures will add a copy of all of the fixtures from the source show into the current show. Any programming that is merged from the source show will use the appended fixtures and all programming in the current show will continue to use the same fixtures as before.

Replace: replacing fixtures will match fixtures from the source show with fixtures in the current show if they have the same type and user number. If a match is made, the fixture in the current show is replaced with the one in the source show and all programming in the source and current show that used that fixture will use the merged fixture. If no match is made, the source fixture is appended to the current show as above.

Important

If you merge fixtures and then merge programming, because both the source show and the current show are using the same fixture, any programming from the source show using that fixture will overwrite the programming in the current show.

13.9.3 Merging Programming

After merging fixtures, you can merge the programming (groups, palettes, cuelists and cues, scenes, pages and views) from the source show; see *Figure 13.25, "The Group Merge page of the Merge Show window"*.

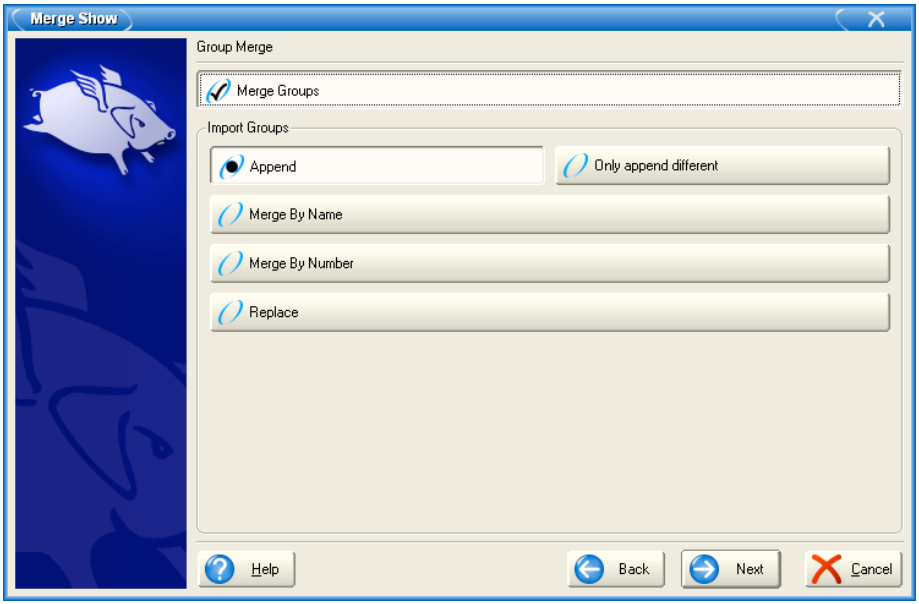


Figure 13.25. The Group Merge page of the Merge Show window

When merging groups, palettes, cuelists and cues, scenes and views the following options are available:

- **Append:** adds all of the programming from the source show to the current show.
- **Append Different:** if programming with the same name cannot by found in the current show, the programming from the source show is appended.
- **Merge By Name:** if programming with the same name is found in the current show, merge the source programming into the current show. If there are any clashes, the source programming will overwrite the current programming. This option is not available when merging views.
- **Merge By Number:** is the same as Merge By Name, but the matching is done by number. This option is not available when merging views.
- **Replace:** if programming with the same number is found in the current show, it is overwritten with programming from the source show. If no match is found, the source programming is appended to the current show.

Tip

You cannot replace palettes in the current show because you could replace a palette with one that doesn't contain programming for fixture parameters that other programming expects it to have.

13.9.4 Dependencies

In order to merge certain parts of a show, you must have chosen to merge other parts:

- To merge groups, you must have merged fixtures.
- To merge palettes, you must have merged fixtures.
- To merge cuelists and cues, you must have merged palettes.
- To merge scenes, you must have merged palettes.
- To merge pages, you must have merged cuelists and scenes.

13.9.5 Using Merging

Example 1: You have programmed your show on two separate consoles (perhaps one controlling moving fixtures and one controlling conventionals) and you want to merge the shows for playback on one console. Each show file contains identical palette and cuelist structures, but they just control their own fixtures.

In this case, Append fixtures and Merge By Name for all programming.

Example 2: You have two shows programmed using the same rig, which you now want to merge. Each show contains exactly the same fixtures.

In this case, Replace fixtures, and Append Different all of the programming (assuming all of the programming has unique names).

Example 3: You need to add a fixture that is not in the current library.

In this case, obtain a new library file from Flying Pig Systems and merge the new fixture.

Section 14: Adding and Configuring Fixtures

14.1 Adding and Removing Fixtures

You Add, remove, duplicate and change the type of fixtures from the Fixture window; see *Figure 14.1, "The Fixture window"*. To open the Fixture window:

- Setup → Patch

Or:

- Open + Fixture

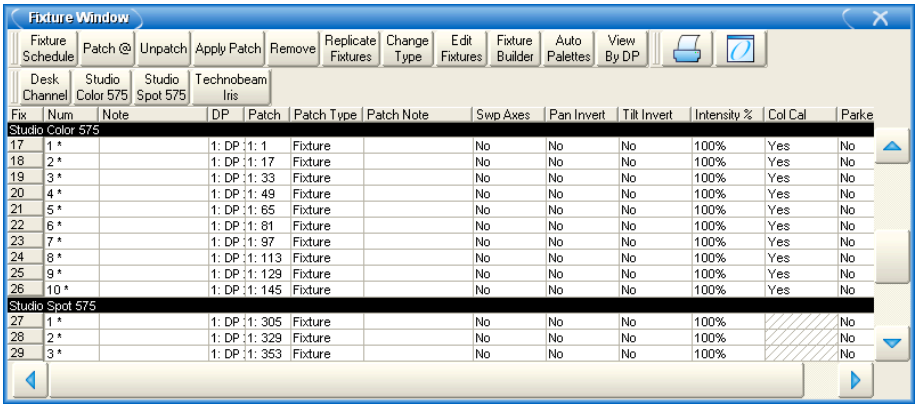

Fixture Window
Fixture Schedule
Patch @
Unpatch
Apply Patch
Remove
Replicate Fixtures
Change Type
Edit Fixtures
Fixture Builder
Auto Palettes
View By DP
Desk Channel
Studio Color 575
Studio Spot 575
Technobeam Iris
Fix Num Note DP Patch Patch Type Patch Note Swp Axes Pan Invert Tilt Invert Intensity % Col Cal Parke
Studio Color 575
17 1 * 1: DP 1: 1 Fixture No No No 100% Yes No
18 2 * 1: DP 1: 17 Fixture No No No 100% Yes No
19 3 * 1: DP 1: 33 Fixture No No No 100% Yes No
20 4 * 1: DP 1: 49 Fixture No No No 100% Yes No
21 5 * 1: DP 1: 65 Fixture No No No 100% Yes No
22 6 * 1: DP 1: 81 Fixture No No No 100% Yes No
23 7 * 1: DP 1: 97 Fixture No No No 100% Yes No
24 8 * 1: DP 1: 113 Fixture No No No 100% Yes No
25 9 * 1: DP 1: 129 Fixture No No No 100% Yes No
26 10 * 1: DP 1: 145 Fixture No No No 100% Yes No
Studio Spot 575
27 1 * 1: DP 1: 305 Fixture No No No 100% No
28 2 * 1: DP 1: 329 Fixture No No No 100% No
29 3 * 1: DP 1: 353 Fixture No No No 100% No

Figure 14.1. The Fixture window

14.1.1 Adding a Fixture to the Show

You add fixtures using the Fixture Schedule dialog within the Fixture window; see *Figure 14.2, "The Fixture Schedule window"*. The Number column shows the number of fixtures of that type currently in the show. Any mode options are shown when you select the fixture type.

To add a fixture:

1. Setup → Patch → Fixture : open the Fixture window.
2. Press the Fixture Schedule button in the top left hand corner of the Fixture window. The Fixture Schedule window will open with a list of fixture personalities in the current Fixture Library; see *Figure 14.2, "The Fixture Schedule window"*. Each fixture is listed under its manufacturer, while Desk Channels (conventional intensity-only fixtures such as parcans) and Scroller-Dimmers are listed under Generic.

3. Use the four Cursor keys (below the Trackball) to navigate to the fixture type that you want to add. The Up and Down keys scroll through the list, while the Left and Right keys open and close sub-lists.
4. Set, **`[number of fixtures required]`**, Enter : assign the quantity of that fixture type in the show.
5. Repeat for all fixture types required. You can add more later.
6. When you have finished select OK.

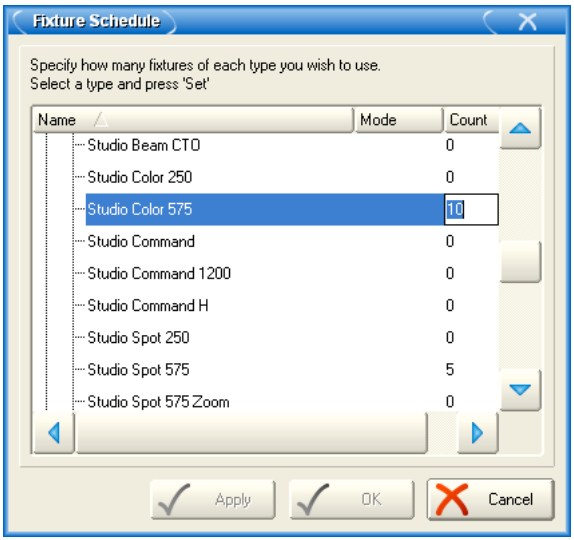


Figure 14.2. The Fixture Schedule window

Tip

If the fixture type that you want doesn't appear in the list, check that you have the latest fixture library from Flying Pig Systems (*www.flyingpig.com*); see *Merging Shows (p.126)*.

14.1.2 Replicating Fixtures

You can expand your show to accommodate a larger rig using the Replicate Fixture function. This will create copies of fixtures, including all their programming. To replicate fixtures:

1. Setup → Patch : open the Fixture window.
2. Select one or more fixtures in the Fixture window by clicking on its numbered button in the left hand column.
3. Press Replicate Fixture, located in the toolbar at the top of the Fixture window.

Figure 14.3, "A Studio Color 575 in the Fixture window, before and after replicating" shows the contents of the Fixture window before and after replicating fixtures.

The new fixtures are an exact copy of the originals, and will be added to every palette, cue and scene that contains programming for the original fixture. The comment cell shows you which fixture it is a copy of. New fixtures are given User Numbers that follow on sequentially from the original fixtures' numbers, but they are not patched or added to any groups. An asterisk will appear next to User Numbers that may now conflict with existing ones.

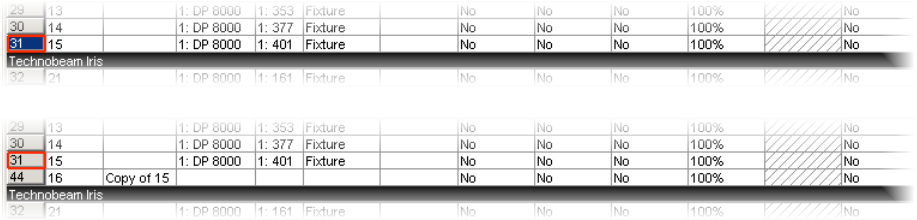

30 14 1: DP 8000 1: 377 Fixture No No No 100% No
31 15 1: DP 8000 1: 401 Fixture No No No 100% No
Technobeam Iris
30 14 1: DP 8000 1: 377 Fixture No No No 100% No
31 15 1: DP 8000 1: 401 Fixture No No No 100% No
44 16 Copy of 15 No No No 100% No
Technobeam Iris

Figure 14.3. A Studio Color 575 in the Fixture window, before and after replicating

14.1.3 Changing the Fixture Type

It is sometimes useful to change the type of a fixture, for example because of production changes where one fixture of one type is replaced by another of a different type, or because the rig has been changed, perhaps by adding a scroller to a desk channel fixture such as a Par.

To change the fixture type:

1. Setup → Patch
2. Select the fixtures you want to change by clicking on the numbered button in the left-hand column.
3. Press the Change Type button and select the new fixture type from the list.
4. Wholehog OS cannot change a fixture's type while it is patched. You will be asked if you want to unpatch any patched fixtures; don't forget to repatch them afterwards.

Figure 14.4, "Changed Fixture Type" shows the contents of the Fixture window before and after changing the fixture type.

Important

Changing a fixture's type may cause ambiguities in any programming that has already taken place. Whilst Wholehog OS translates all real world figure data, including colour and beam, between fixture functions, it cannot match the performance of a higher specification unit with a greater number of functions to that of a lower specification unit.

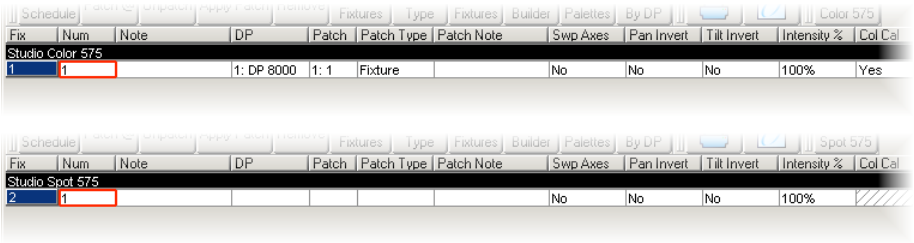


Figure 14.4. Changed Fixture Type

14.1.4 Removing a Fixture from the Show

To remove a fixture:

1. Setup → Patch : open the Fixture window.
2. Fixture **1** Remove : Select the fixture(s) you want to remove, and press Remove.
3. You will be asked to confirm. Select OK.

Important

If you remove a fixture, all of its associated programming in groups, palettes, cues and so on will be removed from the show. To disable a fixture while retaining its programming, unpatch it; see *Unpatching Fixtures (p.146)*.

14.1.5 Creating Palettes and Groups Automatically

Wholehog OS can create groups and palettes automatically, based on the fixtures in your show. This rapidly gives you a set of 'building blocks' to start programming with. To use the Auto Palettes function:

1. Setup → Patch : open the Fixture window.
2. Click on the Auto Palettes button (located in the toolbar at the top of the Fixture window) and select from the options in the Auto Palettes window; see *Figure 14.5, "The Auto Palettes window"*.
3. Click on Generate.

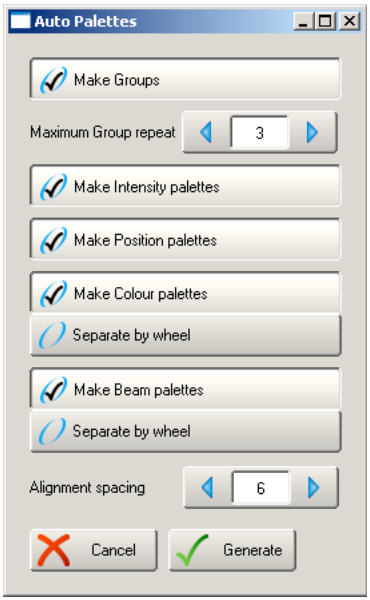


Figure 14.5. The Auto Palettes window

You can choose to have the console automatically make:

- **Groups:** If the Make Groups button is depressed, the console will make groups for each fixture type. You can specify the repeat multiple for the groups to be created. For example, with a value of 3 Group 1 will contain fixtures 1, 4, 7, 10…, Group 2 fixtures 2, 5, 8, 11…, Group 3 fixtures 3, 6, 9, 12…
- **Intensity Palettes:** If the Make Intensity Palettes button is depressed, the console will make intensity palettes.
- **Position Palettes:** If the Make Position Palettes button is depressed, the console will make position palettes.
- **Colour Palettes:** If the Make Colour Palettes button is depressed, the console will make colour palettes. If you press the adjacent Separate by Wheel button, the console will create separate colour palettes for each colour wheel in fixtures that have more than one. This ensures that you can use the palettes to programme looks that use both wheels simultaneously, without the palettes conflicting with each other.
- **Beam Palettes:** If the Make Beam Palettes button is depressed, the console will make beam palettes. If you press the adjacent Separate by Wheel button, the console will create separate beam palettes for each beam effect wheel in fixtures that have more than one. This ensures that you can use the palettes to programme looks that use both wheels simultaneously, without the palettes conflicting with each other.

The Auto Palettes window also allows you to choose the alignment spacing of the palette's directory window. The alignment spacing controls how many palettes are displayed across the directory window; for example 6 for a half screen window, 12 for a full screen window.

For more information on groups and palettes, see *Working with Groups (p.181)* and *Working with Palettes (p.187)*.

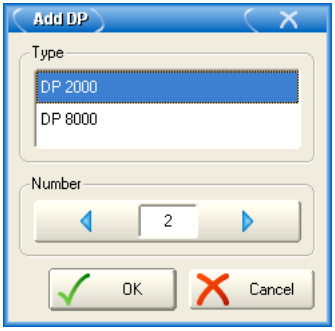
14.2 Patching Fixtures

Once fixtures have been added to the show, they need to be **patched** to the appropriate **DMX address**. On previous consoles such as Wholehog II this was a case of selecting one of several **DMX universes** and assigning a start address between 1 and 512. Because of the network capability of Wholehog OS, fixtures are assigned to a DMX Processor as well as a DMX universe and an address.

14.2.1 Adding and Removing DMX Processors

Wholehog OS automatically detects and makes available any connected DMX Processors, so you don't have to add them manually. If you want to patch fixtures to DMX Processors that are not currently connected to the console, you can add the DMX Processors to the show without them being physically connected:

1. Setup → Patch → Patch@ : open the Fixture Patch window. The Patch@ button is on the toolbar at the top of the Fixture window.
2. Press the Add button below the list of DMX Processors. The Add DP window will open:



3. Select the DMX Processor type and assign a net number.
4. OK : close the Add DP window.
5. OK : close the Fixture Patch window.

To remove a DMX Processor from a show file:

1. Setup → Patch → Patch@ : open the Fixture Patch window. The Patch@ button is on the toolbar at the top of the Fixture window.
2. Select the DMX Processor you wish to remove from the show file.
3. Press the Remove button below the list of DMX Processors. A confirmation dialog will open. Press OK to unpatch and remove the DMX Processor.

14.2.2 Selecting the DMX Processor, Universe and Patch Point

Many fixtures, such as moving lights, use several DMX channels to control their various parameters. Generally, these DMX channels are in a continuous numerical range, and it is the first of these channels (known as the 'start address') that is the DMX address that you assign during the patching process. Wholehog OS uses the information about the fixture contained in the Fixture Library to calculate how many DMX channels are used by the fixture, and assigns them accordingly, starting at the Start Address you have given.

To patch a fixture:

1. Setup → Patch : open the Fixture window.
2. Select the fixture by clicking on it, then select Patch@ to open the Fixture Patch window. See *Figure 14.6, "The Fixture Patch window"*.
3. Select a DMX Processor in the list on the left-hand side of the window. If there are no DMX Processors shown, or you want to patch to one that isn't listed shown in the list, you need to add it. See *Adding and Removing DMX Processors (p.138)*.
4. Click or press one of the available DMX universes shown to select a universe to patch to. The display gives a graphical indication of which addresses are already occupied. Type in a number for the fixture's DMX start address; the next free address is shown below each universe.
5. Click on OK or press Enter.
6. If you have finished patching, click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

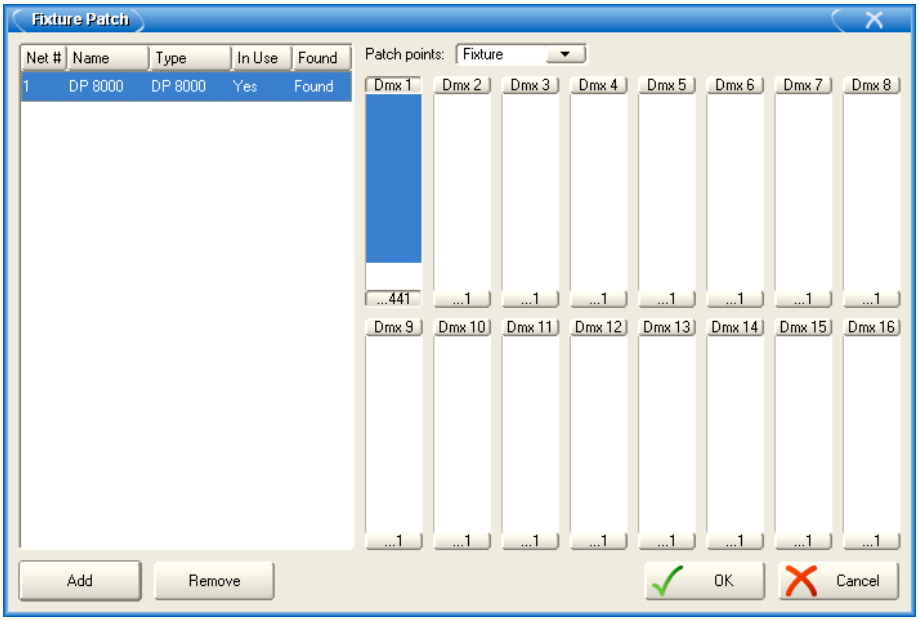


Figure 14.6. The Fixture Patch window

You can also use the keypad to patch fixtures. For example, to patch Studio Color 1 to DMX Processor 2, Universe 4, at address 17:

- Fixture **1** @ **2/4/17** Enter

To patch further fixtures to the same DMX Processor and universe, you can use the shorthand:

- Fixture **2** @ **33** Enter

To patch a fixture at the next available address on the same DMX Processor and universe:

- Fixture **3** @ Enter

Again, if you have finished patching click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

Patching Several Fixtures at Once

If you select several fixtures and patch them, Wholehog OS will allocate them to a continuous range of DMX addresses, assigning each fixture's patch address so that it follows on from the last.

For example, to patch 5 Studio Colors, starting at DMX address 1:

1. Open + Fixture : open the Fixture window

2. Fixture **1** Thru **5** Patch@ **1**, Enter : You can use the @ key as an alternative to the Patch@ button.

Studio Colors 1 to 5 will now have the incremental patch addresses of 1:1, 1:17, 1:33, 1:49, and 1:65. Note that the fixtures selected do not have to be from a contiguous range, and they can be of different types.

Tip

When you patch a range of fixtures, Wholehog OS takes the selection order into account, so that Fixture **1** Thru **10** @ **1** patches the fixtures starting with Fixture 1 and going up in numerical order, while Fixture **10** Thru **1** @ **1** patches the fixtures starting with Fixture 10 and going down in reverse numerical order.

Patching Fixtures to Multiple Addresses

You can patch one fixture to multiple different DMX addresses; this can be useful with desk channels, where you want one desk channel to control several dimmer channels. This is sometimes known as 'soft patching'.

To patch a fixture to a second DMX address, select the fixture again and patch it as before. Alternatively, using the command line:

- Fixture (Desk Channel) **1** @ **2/1/1 + 4/2/5**, Enter : patches the desk channel to DMX Processor 2, universe 1, address 1, and to DMX Processor 4, universe 2, address 5.

Similarly, you can patch a fixture multiple times so as to fill a specified range of DMX addresses. This can be useful if you want to soft patch a desk channel to a continuous series of dimmer DMX addresses.

- Fixture (Desk Channel) **1** @ **1** Thru **10**, Enter : patches the desk channel to each address between 1 and 10.

Tip

You don't have to patch fixtures before you start programming. Once the fixtures have been added they can be programmed. However, without a patch, you will not be able to output DMX.

Finding Unused DMX Addresses

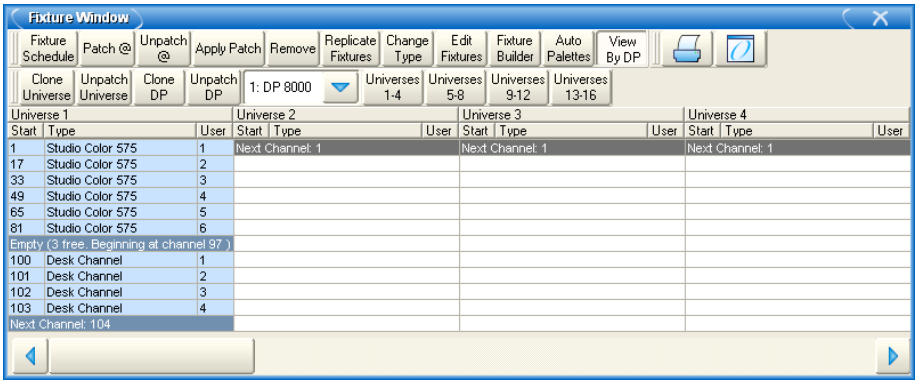


Figure 14.7. The View by DP view of the Fixture window

You can see an overview of all patched fixtures in the Fixture window by using View by DP; see *Figure 14.7, "The View by DP view of the Fixture window"*. This shows a spreadsheet with start address, fixture type and user number for each DMX universe. Additional rows show where there is an available space in the allocated DMX addresses. This is useful when you are patching additional fixtures and you need to know what ranges of DMX addresses are free. To show this view:

- Setup → Patch → View by DP : the View by DP button is on the toolbar at the top of the Fixture window.

You can use the buttons in the toolbar at the top of the window to view each group of four universes of a DMX Processor.

Deselect the View by DP button to return the Fixture window to its normal view.

14.2.3 Fixtures with Multiple Patch Points

Some fixture types consist of several separate elements that work together, each with their own DMX address. An example is a parcan with a scroller, which operationally you want to treat as a single fixture ('a light that can change brightness and colour') but that physically consists of a dimmer-controlled lamp and a colour scroller. Similarly, some moving fixtures such as the Vari*Lite VL5 consist of the moving head with its own control electronics, fed by an external dimmer. See *Figure 14.8, "Examples of Fixtures requiring Multiple Patch Points"*.

With such fixtures, there are two or more DMX start addresses, which may not be numerically adjacent, and indeed may be on different universes and DMX Processors. Wholehog OS handles this by giving these fixtures multiple 'Patch Points', which you address separately in the Fixture Patch window.

For example, to patch the fixture with a scroller (of fixture type 'Scroller Dimmer') shown in *Figure 14.8, "Examples of Fixtures requiring Multiple Patch Points"*:

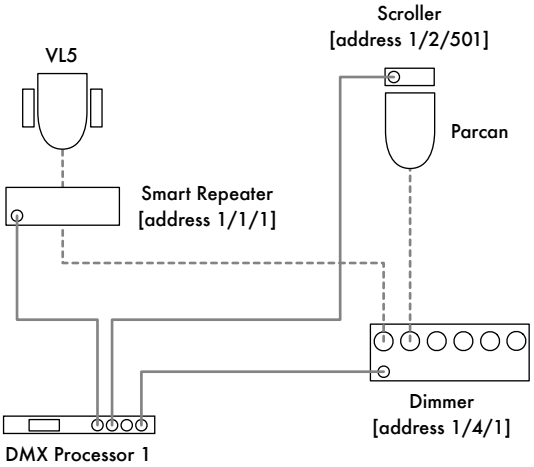
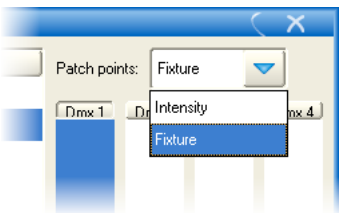


Figure 14.8. Examples of Fixtures requiring Multiple Patch Points

1. Setup → Patch : Open the Fixture window.
2. Fixture (Scroller Dimmer) **1** @ : Opens the Fixture Patch window.
3. Select the Fixture Patch Point (for the scroller) from the drop down list in the top right corner of the Fixture Patch window:



4. Click DMX 2 to select the second DMX universe.
5. **[501]** Enter : Enter the DMX address for the scroller.
6. Fixture (Scroller Dimmer) **1** @ : Opens the Fixture Patch window again.
7. Click DMX 4 to select the fourth DMX universe.
8. Select the Intensity Patch Point (for the dimmer) from the drop down list.
9. **[2]** Enter : Enter the DMX address for the dimmer.
10. Click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

In the Fixture window, these types of fixture will span more than one row - one for each Patch point; see *Figure 14.9, "A Fixture with Multiple Patch Points"*.

Figure 14.9. A Fixture with Multiple Patch Points

14.2.4 Cloning Patching of Universes

Cloning patching copies fixture and associated patch information from one DMX universe to another. A selected fixture will therefore control recurring patch locations across several universes.

To clone the patching of one universe to another:

1. Setup → Patch → View by DP : open the Fixture window in View by DP view.
2. Select the universe to clone by clicking on the column in the spreadsheet. The selected universe is highlighted in blue.
3. Press Clone Universe. The Clone Universe window will open; see *Figure 14.10, "The Clone Universe window"*.
4. Select a destination DMX Processor and universe. You can create a new DMX Processor if you want to clone to a universe on a DMX Processor not currently connected to the console, and you can specify an offset for the patch addresses to position them differently in the universe. Click on OK when you have finished.
5. Click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

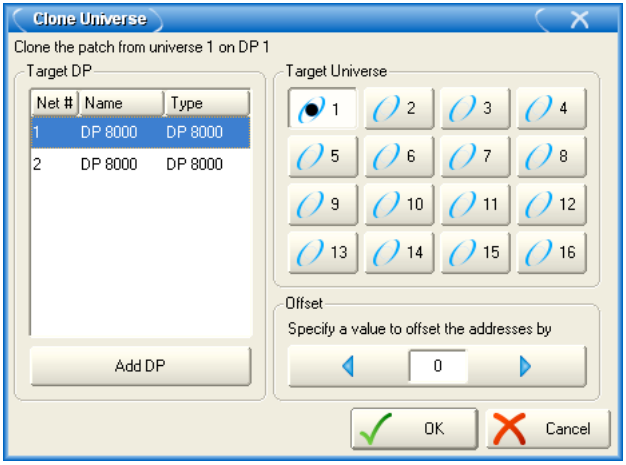


Figure 14.10. The Clone Universe window

If cloning will overwrite patch information in the destination, you will be asked for confirmation. The console will only unpatch previous fixtures that are in the way of new ones; the rest of the destination universe will be untouched.

Tip

You can also move patching from one universe to another by cloning the patch to the new universe, and then unpatching the old universe; see *Unpatching Fixtures (p.146)*.

14.2.5 Cloning Patching of DMX Processors

You can copy fixture and associated patch information from one DMX Processor to another by cloning a DMX Processor's patch. A selected fixture will then control recurring patch locations across several DMX Processors.

To clone the patching of one DMX Processor to another:

1. Setup → Patch → View by DP : open the Fixture window in View by DP view.
2. Select the DMX Processor to clone by selecting it from the DMX Processor drop down menu.
3. Press Clone DP. The Clone DMX Processor window will open; see *Figure 14.11, "The Clone DP window"*.
4. Select a source DMX Processor from the source section of the window. Click Unpatch Source if you wish to move patch entries to the destination DMX Processor instead of copying them.
5. Select a destination DMX Processor from the destination section of the window. If there is conflicting patching on the destination DMX Processor you can choose to unpatch only fixtures in conflict from the destination DMX Processor or to unpatch all fixtures already patched to the destination.

   When cloning between a DMX Processor 8000 and a DMX Processor 2000 you can select which four universes to clone to or from via the universe selection buttons.
6. You can create a new DMX Processor if you want to clone to a universe on a DMX Processor not currently connected to the console. Click the Add DP button and then select a DMX Processor type.
7. Click OK.
8. Click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

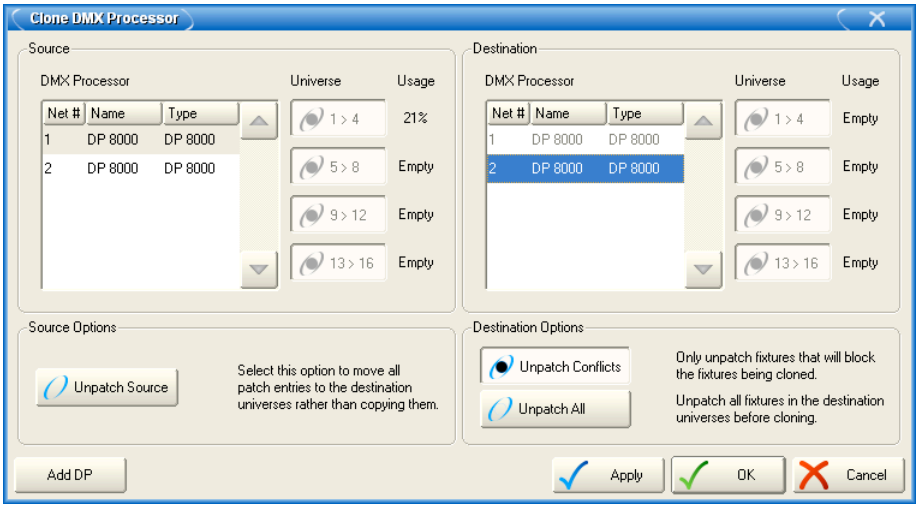


Figure 14.11. The Clone DP window

14.2.6 Unpatching Fixtures

You can unpatch a fixture in order to repatch it with a different start address, or to stop DMX output being sent to it. Unpatching does not erase any programming for the fixture in groups, palettes, cues and so on.

There are two ways to unpatch. Unpatching by fixture removes all patching information for that fixture, even if it has been patched to several start addresses or has multiple patch points. Unpatching by start address only unpatches a specific start address, leaving other start addresses associated with the fixture intact.

Unpatching by Fixture

To unpatch all patch information associated with a fixture:

1. Setup → Patch : open the Fixture window.
2. Select the fixture by clicking on it, then press Unpatch at the top of the Fixture window. This unpatches the fixture, but leaves all programming for the fixture intact.
3. Click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

Or, using the command line:

1. Setup → Patch : open the Fixture window.
2. Fixture **1** Pig + @, Enter
3. Click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

Unpatching by DMX Address

To unpatch a specific DMX start address you need to change the Fixture window to View by DP.:

1. Setup → Patch : open the Fixture window.
2. View by DP : change the Fixture window to View by DP.

When View by DP is selected, the UnpatchAt button is available on the top toolbar of the Fixture window. To unpatch start address 200 in the currently selected DMX universe (highlighted in blue):

- UnpatchAt **200**

To unpatch several start addresses:

- UnpatchAt **1/2/200 + 2/3/300**

To unpatch a range of start addresses:

- UnpatchAt **200** Thru **300** : unpatches all start addresses between 200 and 300.

To unpatch an entire universe:

1. Click or press on the universe to unpatch, so that it is highlighted in blue.
2. Press Unpatch Universe at the top of the Fixture window and confirm that you want to unpatch.

Click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

To unpatch an entire DMX Processor:

1. Select the DMX Processor to unpatch from the dropdown list at the top of the Fixture window.
2. Press Unpatch DP, and confirm that you want to unpatch.

Click on Apply Patch or close the Fixture window to send the new patch information to the DMX Processors.

14.3 Configuring Fixtures

Each fixture has a variety of settings that control how Wholehog OS handles it. Settings that control how the fixture as a whole behaves are configured in the Fixture window, while settings that are specific to individual parameters are configured in the Edit Fixtures window.

14.3.1 Fixture Configuration

To open the Fixture window (*Figure 14.12, "The Fixture window"*):

- Setup → Patch

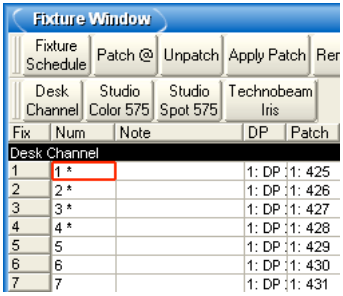
Or:

- Open + Fixture

In the Fixture window, you can view, but not alter, the fixture type and communications protocol for each fixture. To show these columns, right-click on any column header, and select either Type or Protocol.

Modifying the User Number

The User Number is the number that you use to select a particular fixture when programming. By default, Wholehog OS gives each fixture type its own range of user numbers, so that there might be several fixtures numbered 1, of different types. If this is the case, the fixture number has an asterisk next to it in the Fixture window:



To change the User Number:

1. Open + Fixture
2. Select the fixture's Num cell (short for User Number).
3. Set, **[new number]**, Enter

To change several User Numbers at once:

1. Open + Fixture
2. Select a range of User Number cells by pressing or clicking, and then dragging.
3. Set, **[new number]**, Enter : allocates a range of User Numbers starting with the number that you enter.

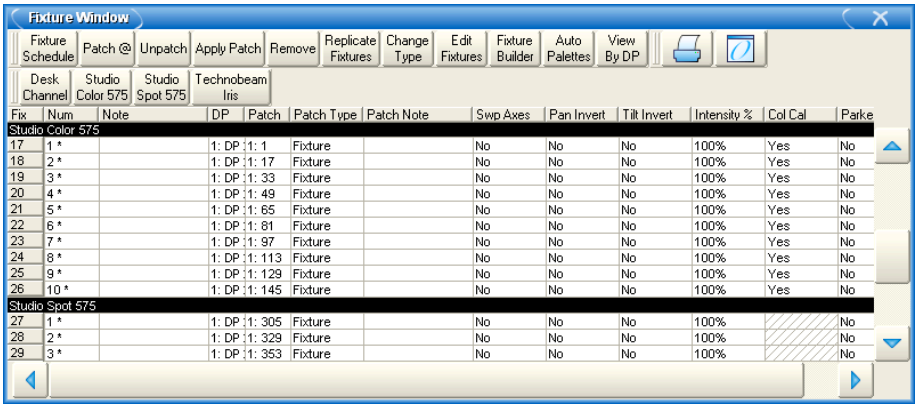

Fixture Window
Fixture Schedule
Patch @
Unpatch
Apply Patch
Remove
Replicate Fixtures
Change Type
Edit Fixtures
Fixture Builder
Auto Palettes
View By DP
Desk Channel
Studio Color 575
Studio Spot 575
Technobeam Iris
Fix | Num | Note | DP | Patch | Patch Type | Patch Note | Swp Axes | Pan Invert | Tilt Invert | Intensity % | Col Cal | Parke
Studio Color 575
17 | 1 * | | 1: DP 1: 1 | Fixture | No | No | No | 100% | Yes | No
18 | 2 * | | 1: DP 1: 17 | Fixture | No | No | No | 100% | Yes | No
19 | 3 * | | 1: DP 1: 33 | Fixture | No | No | No | 100% | Yes | No
20 | 4 * | | 1: DP 1: 49 | Fixture | No | No | No | 100% | Yes | No
21 | 5 * | | 1: DP 1: 65 | Fixture | No | No | No | 100% | Yes | No
22 | 6 * | | 1: DP 1: 81 | Fixture | No | No | No | 100% | Yes | No
23 | 7 * | | 1: DP 1: 97 | Fixture | No | No | No | 100% | Yes | No
24 | 8 * | | 1: DP 1: 113 | Fixture | No | No | No | 100% | Yes | No
25 | 9 * | | 1: DP 1: 129 | Fixture | No | No | No | 100% | Yes | No
26 | 10 * | | 1: DP 1: 145 | Fixture | No | No | No | 100% | Yes | No
Studio Spot 575
27 | 1 * | | 1: DP 1: 305 | Fixture | No | No | No | 100% | | No
28 | 2 * | | 1: DP 1: 329 | Fixture | No | No | No | 100% | | No
29 | 3 * | | 1: DP 1: 353 | Fixture | No | No | No | 100% | | No

Figure 14.12. The Fixture window

Tip

You can renumber the fixtures in your show so that each one has a unique number irrespective of its type. By doing this you never have to specify the type when selecting fixtures, which can speed up programming. See *Selecting Fixtures (p.156)*.

Notes

Notes can be used to attach a comment to a fixture, such as its location or intended use.

To add a note:

1. Open + Fixture
2. Select the fixture's Note cell.
3. Set **`[text of note]`** Enter : Type in the note text.

Tip

Fixture notes can be displayed in editors such as the Programmer, but this is turned off by default. To display notes, right click on any column header in the editor, and select Note.

Patch Notes

Patch Notes can be used to attach a comment to a fixture regarding its patching.

To add a Patch Note:

1. Open + Fixture
2. Select the fixture's Patch Note cell.
3. Set **`[text of note]`** Enter : Type in the note text.

Inverting and Swapping Pan and Tilt Axes

Depending on a fixture's orientation in the rig, you may want to invert or swap its pan and tilt axes. For example, inverting the pan can ensure that when moving the Trackball left, a fixture rigged facing the operator moves to the operator's left, not the fixture's left.

Similarly, if units are rigged facing across the stage rather than facing up or down stage, then swapping the axes keeps the Trackball movement and the fixture movement the same. This also ensures that fixtures selected in groups all move in the same direction as the Trackball is moved.

Fixtures that are rigged in other positions, for example on the stage floor as opposed to hanging, then combinations of swap and invert (either pan, tilt or both) may be required.

To invert axes:

1. Open + Fixture
2. Scroll to the desired fixture, and select either its Pan Invert or Tilt Invert cell.
3. Press Set, and choose Yes to invert the axis.

To swap axes:

1. Open + Fixture
2. Scroll to the desired fixture, and select its SwpAxes cell.
3. Press Set, and choose Swap to swap axes.

Proportional Patch

You can use proportional patching to change the intensity value output by the console to a fixture, relative to the intensity value that has been programmed. All intensity values for the fixture are reduced in proportion, so that with a proportional patch of 80%, a programmed intensity of 100% would be output as an intensity of 80%, and one of 50% would be output as 40%. You can use this to limit the maximum intensity of a fixture so that it never goes above 80%, for example, by assigning the proportional patch to 80%.

To assign a fixture's proportional patch:

1. Open + Fixture
2. Select the Intensity % cell for the fixture required.
3. Set, **[percentage]**, Enter : enter a percentage.
4. To return the proportional patch to normal, assign the value to 100%.

You can assign a proportional patch value of above 100%. For example, if you patch at 200%, the intensity value that the console outputs will be twice that programmed. A

programmed value of 25% will give 50% output, and 50% will give 100%. Programmed levels above 50% will not, regrettably, give fixture intensities above 100%.

Note that if you proportionally patch a fixture, its intensity will still be displayed on the console in the range 0 to 100%, even though the output value will be varying over the range defined by the proportional patch value.

Colour Calibration

The Fixture window has a column labeled Col Cal, which shows whether the fixture has colour calibration data in the fixture library. You cannot edit this column, but it is useful to be able to check if the fixture is colour calibrated when working with the Colour Picker; see *Working with Colour (p.165)*.

14.3.2 Parameter Configuration

You can configure settings that are specific to individual parameters in the Edit Fixtures window (*Figure 14.13, "The Edit Fixtures window"*):

- Setup → Patch → Edit Fixtures

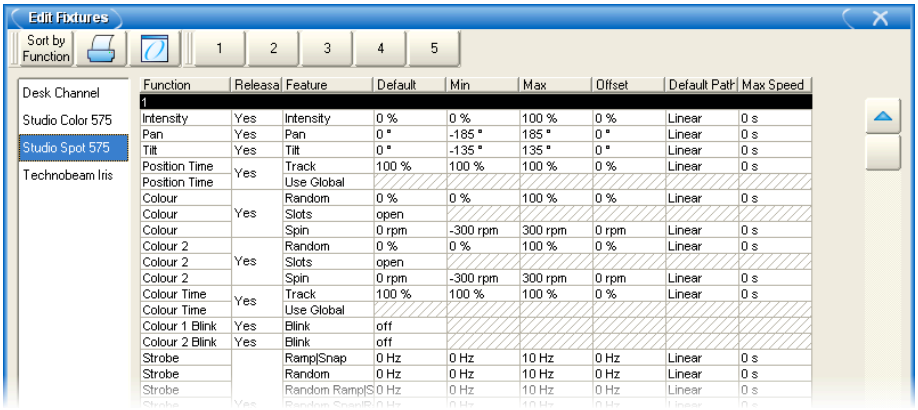

Edit Fixtures
Sort by Function
1
2
3
4
5
Desk Channel
Studio Color 575
Studio Spot 575
Technobeam Iris
Function | Releasa | Feature | Default | Min | Max | Offset | Default Path | Max Speed
Intensity | Yes | Intensity | 0 % | 0 % | 100 % | 0 % | Linear | 0 s
Pan | Yes | Pan | 0 ° | -185 ° | 185 ° | 0 ° | Linear | 0 s
Tilt | Yes | Tilt | 0 ° | -135 ° | 135 ° | 0 ° | Linear | 0 s
Position Time | Yes | Track | 100 % | 100 % | 100 % | 0 % | Linear | 0 s
Position Time | | Use Global
Colour | Yes | Random | 0 % | 0 % | 100 % | 0 % | Linear | 0 s
Colour | | Slots | open
Colour | | Spin | 0 rpm | -300 rpm | 300 rpm | 0 rpm | Linear | 0 s
Colour 2 | Yes | Random | 0 % | 0 % | 100 % | 0 % | Linear | 0 s
Colour 2 | | Slots | open
Colour 2 | | Spin | 0 rpm | -300 rpm | 300 rpm | 0 rpm | Linear | 0 s
Colour Time | Yes | Track | 100 % | 100 % | 100 % | 0 % | Linear | 0 s
Colour Time | | Use Global
Colour 1 Blink | Yes | Blink | off
Colour 2 Blink | Yes | Blink | off
Strobe | | Ramp|Snap | 0 Hz | 0 Hz | 10 Hz | 0 Hz | Linear | 0 s
Strobe | | Random | 0 Hz | 0 Hz | 10 Hz | 0 Hz | Linear | 0 s
Strobe | | Random Ramp|S | 0 Hz | 0 Hz | 10 Hz | 0 Hz | Linear | 0 s

Figure 14.13. The Edit Fixtures window

You can select a fixture type from the list on the left hand side of the window. The main part of the window then shows the configurable settings for each fixture of that type. The numbered buttons in the Jump Toolbar at the top of the window take you quickly to a particular fixture of that type.

Pressing the Sort by Function button in the top left of the window changes the view, so that the main list groups each parameter together for all the fixtures of the type selected in the list. This is often the easiest way to work in the window, as you can easily click or press and then drag to select a range of cells to edit. For example, you could assign in one action the default value for the pan parameter of all the Studio Color 575 fixtures in the show; see *Figure 14.14, "The Edit Fixtures window sorted by Function"*.

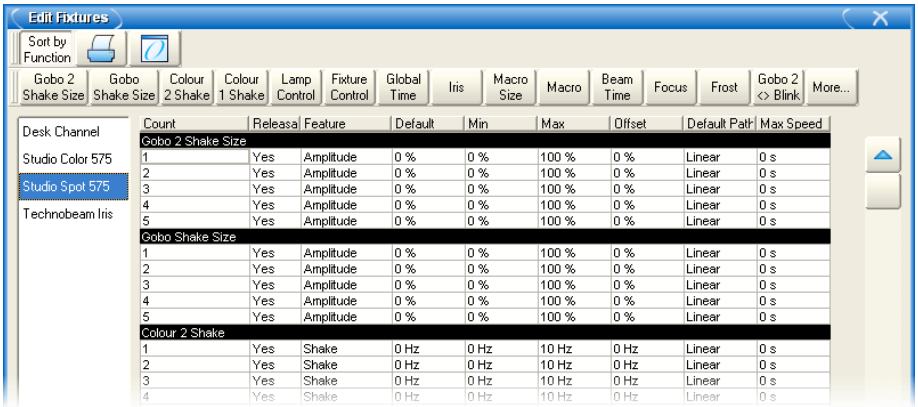

Edit Fixtures
Sort by Function
Gobo 2 Shake Size
Gobo Shake Size
Colour 2 Shake
Colour 1 Shake
Lamp Control
Fixture Control
Global Time
Iris
Macro Size
Macro
Beam Time
Focus
Frost
Gobo 2 <> Blink
More...
Desk Channel
Studio Color 575
Studio Spot 575
Technobeam Iris
Count | Releasa | Feature | Default | Min | Max | Offset | Default Path | Max Speed
Gobo 2 Shake Size
1 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
2 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
3 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
4 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
5 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
Gobo Shake Size
1 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
2 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
3 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
4 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
5 Yes Amplitude 0 % 0 % 100 % 0 % Linear 0 s
Colour 2 Shake
1 Yes Shake 0 Hz 0 Hz 10 Hz 0 Hz Linear 0 s
2 Yes Shake 0 Hz 0 Hz 10 Hz 0 Hz Linear 0 s
3 Yes Shake 0 Hz 0 Hz 10 Hz 0 Hz Linear 0 s

Figure 14.14. The Edit Fixtures window sorted by Function

Assigning Minimums and Maximums for Parameters

When fixtures are placed close to obstacles, such as trussing or set pieces, it may be important to limit movement to prevent accidental damage, especially when the fixture is out of view of the operator. However, other functions can also be limited, for example to implement a house or event policy on the use of strobe lighting.

Note that limits can only be assigned for continuous parameters, not slotted ones.

To assign limits:

1. Setup → Patch → Edit Fixtures
2. Select the Minimum cell of the parameter you wish to limit.
3. Set, **`[new value]`**, Enter : Enter a value as a real world unit. In the case of pan and tilt, it will be a plus or minus number of degrees from the fixture's default position.
4. Repeat to assign the Maximum value.

Assigning a Custom Default

The default value is the value that the parameter will take when no playbacks or editors are controlling it. Fixtures also go to their default setting when the console starts up.

To assign a custom default:

1. Setup → Patch → Edit Fixtures
2. Select the Default cell of the desired parameter.
3. Set, **`[new value]`**, Enter : Enter a value as a real world unit.

Assign a Parameter Offset

This setting allows you to offset the range of values over which a parameter varies. For instance if one fixture is hung at an angle to the bar, so that it has a different pan centre-point from all the others on that bar, then you could assign an offset so that the fixture appeared to line up from a programming and operating point of view.

To assign a parameter offset:

1. Setup → Patch → Edit Fixtures
2. Select the Offset cell of the desired parameter.
3. Set, **`[new value]`**, Enter : Enter a value as a real world unit.

Important

Applying an offset to a parameter after you have programmed values for it into your show will mean that those values will also be offset.

Naming Slots

Some fixture parameters are continuously variable, for example CMY colour mixing. On the other hand some parameters, for example gobo or colour wheels, work in discrete increments or 'slots'.

The Fixture Library loaded into Wholehog OS defines the fixture's default slots, displayed on the Slot Toolbar, in palettes and the Programmer. When custom gobos or colours are used, you can customise the show file to display a suitable name for each gobo or colour slot, chosen from those in the fixture library.

To name a slot parameter:

1. Setup → Patch → Edit Fixtures
2. For the desired fixture, scroll right and select the Slot cell for the parameter required.
3. Press Set, select the desired slot name from the list, and press Enter.

Releasable Parameters

Fixture parameters move to their default values when they are released. You can prevent specific fixture parameters from returning to their default values, so that they hold their current value until they are assigned to a new programmed value:

1. Setup → Patch → Edit Fixtures : open the Edit Fixtures window.
2. Click on the Releasable cell for the required fixture parameter.
3. Press the Set key to assign the fixture parameter to be releasable or not as required.

Section 15: Selecting Fixtures, Modifying Parameters

You can select Fixtures and modify their parameters in the Programmer. Once recorded in palettes, cues and scenes they can be adjusted in editors. The Programmer and other editors all work in essentially the same way; for an overview of editors see *Working with Editors (p.112)*.

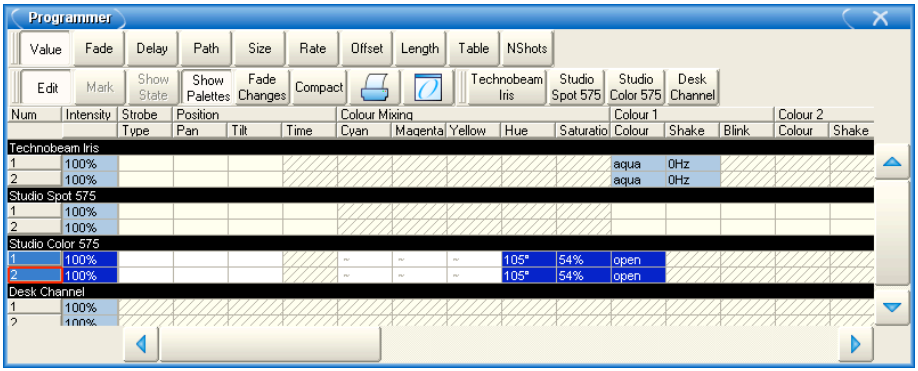


Figure 15.1. The Programmer window

To open the Programmer:

- Select Programmer from the Main Toolbar.

To open other editors:

- Select the desired palette, cue or scene and Open. Press the Edit button in the editor window if you want to change, not just view, parameter values.

If you have several editors open, only one will receive commands from the command line; use the Edit button in each editor window to select which one. When you open an editor with the Open key, it is automatically made the editable editor.

Tip

To have editors open without automatically becoming the editable editor, go to Setup → Preferences → Programming → Preview Editors and select Open As Inactive.

15.1 Selecting Fixtures

On Wholehog OS, you select fixtures and **desk channels** using the **command line** with the numeric keypad, or visually in the editor. For an overview of the command line, see *Using the Command Line (p.114)*.

15.1.1 Selecting Individual Fixtures

To select a fixture visually in the editor window, click on its number in the Num column of the spreadsheet.

To select a fixture using the command line, you need to select the fixture type followed by the fixture's number. For example, to select Studio Color number 1:

- Fixture, (Studio Color 575), **1** : when you press the Fixture key, types of available fixtures will appear at the bottom of the right hand touch screen, where you can select (Studio Color 575):

Wholehog OS maintains the type of the last fixture selected. If, for example, Studio Colors are selected then all fixture numbers entered into the command line will refer to Studio Colors until a new fixture type is selected.

Tip

Repeated pressing of the Fixture key will cycle through the available fixture types.

If you have assigned your user numbers as a non-repetitive single sequence, simply type the fixture's user number irrespective of type. For example, using the tutorial show fixtures and user numbers:

- **1**, Enter : selects the first Studio Color.
- **21**, Enter : selects the first Technobeam.

To assign user numbers, see *Modifying the User Number (p.148)*.

Note that throughout this manual, the examples generally assume that you have assigned user numbers so that they are unique. The syntax shown does not include selecting a fixture type.

15.1.2 Selecting Multiple Fixtures

You can select more than one fixture of the selected type using the +, – and Thru key. For example:

- Fixture **1** + **5**, Enter : selects fixtures 1 and 5.
- Fixture **1** Thru **5**, Enter : selects fixtures 1 to 5.
- **1** Thru **5** – **4** : selects fixtures 1 to 5, but not 4.
- **1** Thru **5** + **7** : selects 1 to 5 and also 7.
- **5** Thru Enter : selects from fixture 5 of the current type through to the last fixture of the current type.
- Thru Enter : selects all fixtures of the current type.

You can also select more than one fixture from a range of fixture types, for example Studio Spot 1 and Studio Color 6:

- Fixture (Studio Spot 575) **1** Fixture (Studio Color 575) **6**, Enter

Note that selections are cumulative, building the total selection, until the selection is used to perform an action on the selected fixtures. After that, subsequent selections start from nothing, unless you use + or – to add or subtract from the previous selection.

Tip

To select all fixtures of a particular type, press the Fixture key then Pig + (Fixture type) from the toolbar at the bottom of the right-hand touch screen.

15.1.3 Select All

You can select all the fixtures in the Programmer using the All button on the Select Toolbar. For example:

1. Studio Colors 1 to 5 are in the Programmer, but not selected.
2. Main Toolbar → Select : open the Select Toolbar; see *Figure 15.2, "The Select Toolbar"*.
3. All : the selection is now Studio Colors 1 to 5.

Or with a key shortcut:

- Next + Back : hold down Next and press Back.

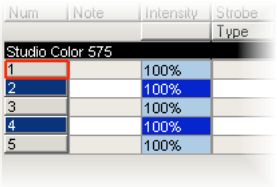
Figure 15.2. The Select Toolbar

15.1.4 Inverting the Selection

You can invert the current selection, so that the fixtures in the editor that were previously *not* selected become the new selection. For example:

1. Studio Colors 1 to 5 are in the Programmer.
2. Fixture **1** + **3** + **5** : select Studio Colors 1, 3 and 5:

3. Main Toolbar → Select : open the Select Toolbar; see *Figure 15.2, "The Select Toolbar"*.
4. Invert : the selection is now Studio Colors 2 and 4:



15.1.5 Sub Selections

You can make sub selections from within the current selection, using the Next and Back keys, and the Odd, Even and Random buttons on the Select Toolbar:

- Main Toolbar → Select

Random: The Random button selects a single fixture at random from the current active selection in the Programmer.

Even and Odd: The Even and Odd buttons on the Select Toolbar select the even and odd fixtures from the current selection, according to the *The Selection Order (p.159)*. Note that the selection order is not related to fixture user numbers, so the sub selection produced by Odd might contain even-numbered fixtures.

Next and Back: The Next and Back keys on the console select a single fixture from within the current selection. Repeatedly pressing Next or Back steps forwards or backwards through the current selection, with the order determined by the *The Selection Order (p.159)*.

To select even or odd fixtures from the current selection based upon fixture user numbers, use Pig + Even or Pig + Odd.

Tip

When the Trackball is in position mode, the bottom left Trackball key also acts as a Next key. This can make it very fast to work through a selection of fixtures assigning their position.

15.1.6 Deselecting Fixtures

To deselect all selected fixtures, press the Backspace key when the command line is empty. You can also use the following command line syntax:

- Fixture **0** Enter : deselects all fixtures.

To deselect specific fixtures, use the – key:

- – Fixture **1** : deselects Fixture 1.

Alternatively, you can deselect a fixture visually in the Programmer or editor window by clicking on its number in the Num column.

15.1.7 Reselecting Fixtures

You can recall the last sub selection made before deselecting fixtures by pressing Previous on the Select Toolbar.

15.2 The Selection Order

The order in which you select fixtures is significant in controlling how fanning and effects are applied to them; see *Fanning (p.173)* and *Working with Effects (p.251)*. For example, applying a fan or effect after selecting fixtures 1-5 can appear different than if you selected fixtures 1 + 3 + 2 + 4 + 5.

The selection order is relevant during programming, and is recorded as part of groups, but it is not recorded in palettes, cues or scenes.

Tip

Because the console records the selection order as part of groups, you can select the group and use the Next and Back keys to subselect each fixture in a particular order. By controlling the selection order when you record the group, you can then work through a series of fixtures in the order they are physically positioned in the rig, instead of in numerical order.

15.2.1 Reverse, Shuffle and Reorder

You can change the selection order of fixtures in predefined ways. The Reverse, Shuffle, and Reorder buttons are on the Select Toolbar and Fanning Toolbar:

- Main Toolbar → Select : open the Select Toolbar.

Reverse: reverses the selection sequence, so that the last is first and the first is last. For example, the fixture selection 1-5 becomes 5-1.

Shuffle: randomises the selection order of the current selection. For example, the fixture selection 1-5 becomes 3 + 5 + 2 + 1 + 4.

Reorder: sorts the selection order to match the User Number order. For example, the fixture selection 3 + 5 + 2 + 1 + 4 becomes 1-5.

Tip

The Reverse, Shuffle, and Reorder buttons can also be found on the Fanning Toolbar, which you can open by pressing and holding the Fan key. See *Fanning (p.173)*.

15.3 Modifying Parameters

Once fixtures are selected within an editor, you can modify their parameters. Wholehog OS classifies parameters into four parameter types: intensity, position, colour and beam. There are also three special types: effect, time and control.

Wholehog consoles provide several ways to adjust the different parameter types:

- **Command Line:** Use for intensity and selecting palettes.
- **I-Wheel:** Use for intensity.
- **Trackball:** Use for position (pan and tilt). Use the top-right Trackball key to switch the Trackball between controlling the on-screen pointer and the position of selected fixtures.
- **Parameter Wheels:** Use for intensity, position, colour, beam, effects, time and control. To change the parameter type currently controlled by the parameter wheels, select one of the parameter type keys on the front panel: Intensity, Position, Colour, Beam, Effect, Time and Control.

  If the fixture has more parameters of a particular type than there are parameter wheels you can press the parameter type keys to page through the parameters.
- **Slot Toolbar:** Use for parameters that have discrete rather than continuous values (known as 'slotted'), such as the positions of a colour wheel. This gives you button-press control of the possible values.

The Slot Toolbar also has buttons to access the control functions: Enable, Mode and Control.

- **Spreadsheet:** You can directly edit a parameter's value in an editor's spreadsheet view. Click on the cell, press Set, type in a value and press Enter.
- **Colour Picker:** You can assign **hue** and **saturation** values for a fixture's colour using the Colour Picker. See *The Colour Picker (p.167)*.
- **Gel Picker:** You can assign the colour of fixtures to match a colour filter from various manufacturers' ranges using the Gel Picker. See *The Gel Picker (p.168)*.

15.3.1 Intensity

Fixture intensities can either be assigned from the keypad or using the I-Wheel, as well as the parameter wheels and by editing directly in the editor spreadsheet.

With the @ Key

To assign intensities using the @ key and the numeric keypad:

- Fixture **4** @ **70**, Enter : Assigns Fixture 4 to 70%.
- Fixture **4** @ **5**, Enter : Assigns Fixture 4 to 50% (not 5%).
- Fixture **4** @ **05**, Enter : Assigns Fixture 4 to 5%.

To assign fixtures to full or zero:

- Fixture **4** Full : Assigns Fixture 4 to full.
- Fixture **4** Out : Assigns Fixture 4 to zero. The Out button is on the Main Toolbar.

The intensity of a fixture can be changed relative to its current level, for example:

- Fixture **4** @ + **5**, Enter : increases the intensity of Fixture 4 by 50%.
- Fixture **4** @ – **10**, Enter : reduces the intensity of Fixture 4 by 10%.

The intensity of a fixture can be scaled proportionally, for example:

- Fixture **4** @ / **70**, Enter : scales the intensity of Fixture 4 to 70% of its original value.
- Fixture **4** @ / **120**, Enter : scales the intensity of Fixture 4 to 120% of its original value.

With the I-Wheel

Moving the I-Wheel changes the level of the selected fixtures. When selecting several fixtures and adjusting levels, the wheel will maintain relative differences between them, so that all intensities change by the same amount. For example, if fixture 1 is at 10%, 2 at 50% and the wheel is increased by 10%, then fixture 1 will move to 20% and 2 will move to 60%.

By holding the Pig key whilst using the wheel, intensities will be increased or decreased in proportion to their individual level. For example, if fixture 1 is at 10%, 2 at 50% and the wheel is increased by 10%, then fixture 1 will move to 11% and 2 will move to 55%.

The Nudge Up and Nudge Down keys above and below the I-Wheel can be used to increase and decrease the intensity by a preset amount. The size of the increment is 10% by default, but you can change it in the Programming pane of the User Preferences window.

Using Pig + Nudge Up and Pig + Nudge Down will create a half nudge step. It will increase or decrease the intensity by half of the assigned amount. For instance if the nudge value is set to +10% a Pig + Nudge Up will produce +5%.

Remainder Dim

The Rem Dim button on the Main Toolbar takes to zero the intensity of any unselected fixtures in the current editor that currently have above-zero intensity. You can use the Undo button to reverse the Rem Dim command.

15.3.2 Position

Using the Trackball

To switch the Trackball from controlling the cursor to controlling fixture position, press the top right selection key adjacent to the Trackball. When controlling fixture position the Trackball will glow blue, and can be used in two modes. To change mode press the top right Trackball selection key.

- **Position Mode:** In the default mode, the pan and tilt of the fixture follows the movement of the Trackball.
- **Ortho Mode:** Ortho mode helps the accurate positioning of fixtures by constraining pan while changing tilt, or vice versa.

The Status Bar at the right hand end of the Command Line Toolbar shows when the Trackball is in Position Mode with the legend 'POS', and when it is in Ortho Mode with the legend 'POS, ortho'.

You can assign the way that fixtures move in relation to the Trackball. See *Inverting and Swapping Pan and Tilt Axes (p.150)*.

Tip

An external mouse will always control the graphical pointer, so you can keep the Trackball in position mode to save having to change modes as you programme.

Using the Parameter Wheels

The pan and tilt parameters also appear on the parameter wheels after the Position key is depressed, and can be used as an alternative to the Trackball.

Flip

With some moving lights, there is more than one combination of pan and tilt that results in the beam hitting the same point on the stage. You may sometimes want to change the pan and tilt combination being used, for example to ensure that the fixture takes the most direct route during a position change.

The Flip function cycles the selected fixtures through the possible combinations in turn. To do this, select the fixture or fixtures and press Flip on the Main Toolbar.

Holding the Pig key down while pressing Flip cycles through the combinations the other way.

Tip

When the Trackball is in position mode, the top left Trackball key also acts as a Flip key, for quick access while positioning fixtures.

15.3.3 Continuous Parameters: Colour and Beam

Colour and beam parameters can be either discrete (known as 'slotted') or continuous. An example of a slotted parameter is the gobo and colour wheels in a moving light, which can be assigned to values such as Gobo 1 and Colour 3. Examples of continuous parameters are the colour mixing controls on some moving lights, irises, and variable-speed strobes; these can be assigned to a percentage or real-world value. It is sometimes useful to treat slotted parameters as continuous; for example, you might want to assign a gobo or colour wheel part way between two positions to achieve a particular effect. Wholehog OS allows you to treat such parameters as either slotted or continuous when assigning values to them.

To control continuous colour and beam parameters:

1. Press the appropriate parameter type key : Colour or Beam. The Wheels Toolbar shows the available parameters and their current value; see *Figure 15.3, "The Wheels Toolbar for the Beam Parameters of a Studio Spot 575"*.
2. If the selected fixture has more parameters of the selected type than there are wheels, the Wheelsets Toolbar will open; see *Figure 15.4, "The Wheelsets Toolbar for a Studio Spot 575"*. Page through the available

parameters by pressing the parameter type key again, or select a button on the toolbar.

3. Adjust the parameter value using the parameter wheels.

Figure 15.3. The Wheels Toolbar for the Beam Parameters of a Studio Spot 575

Figure 15.4. The Wheelsets Toolbar for a Studio Spot 575

Some parameters that appear on the parameter wheels have more than one mode. These modes are shown as a list on the Wheels Toolbar, and you can select the modes by clicking on the wheel's button on the toolbar.

Snapping to a Single Value

When you have several fixtures selected, you can make all the values of a parameter the same as that of the first fixture:

- Press and hold the / key while turning the appropriate parameter wheel.

Jumping to Endstop Values

You can assign a parameter to its endstop values:

- Press and hold the + key and adjust the appropriate parameter wheel clockwise to assign the parameter to its maximum value, and anticlockwise to assign the parameter to its minimum value.

Inverting Parameter Values

Some parameters have values either side of zero; for example, gobo rotation speed. You can invert such parameters so that they have the same value but the other side of zero. In the case of gobo rotation, this reverses the direction whilst maintaining the current speed. To invert a parameter:

- Press and hold the – key and adjust the appropriate parameter wheel.

15.3.4 Slotted Parameters: Colour and Beam

To control slotted colour and beam parameters such as gobo and colour wheels:

1. Press the appropriate parameter type key : Colour or Beam. The Slot Toolbar shows the available parameters; see *Figure 15.5, "The Slot Toolbar for a Studio Spot 575"*.

2. Click on the required parameter, and an additional toolbar will open showing the available slot positions; see *Figure 15.6, "The Colour Slots Toolbar for a Studio Spot 575"*.
3. Select a slot from the available slot positions.

Figure 15.5. The Slot Toolbar for a Studio Spot 575

Figure 15.6. The Colour Slots Toolbar for a Studio Spot 575

15.3.5 Working with Colour

Fixtures that have continuously variable colour mixing create colour in different ways. The two main systems are:

- **CMY:** this system is used by most moving lights that have continuous colour mixing; the colour is controlled by three parameters: Cyan (C), Magenta (M) and Yellow (Y). Fixtures that use the CMY system start by producing white light, and then filter out the unwanted colours to leave the desired colour; higher parameter values produce a greater filtering effect, so that setting them all to 100% produces black. To avoid wasting the light intensity of the fixture, you should always keep at least one of the CMY parameters at 0%, setting the other two at higher values to get more saturated colours. For example, values of 0%C, 0%M, 20%Y will produce a pale yellow tint, while 0%C, 100%M, 0%Y will produce a fully saturated magenta. Mixing two of the colours will produce further shades, so 50%C, 0%M, 50%Y will produce a middle-saturation green.
- **RGB:** this system is used mainly by fixtures based on LEDs. The colour is controlled by three parameters: Red (R), Green (G) and Blue (B); with the three parameters at 0% the fixture produces no light output, and the higher than value of these parameters, the greater the fixture's total light output. If the three parameters have equal values, then the light output will be white (within the limits of the technologies used); use one or two of the parameters to get the colour you want, and then add the other(s) to de-saturate it ('dilute' it towards white). For example, values of 0%R, 0%G, 100%B will produce a bright, saturated blue, while 80%R, 80%G, 100%B will produce a bright, blue tint. 50%R, 100%G, 100%B will produce a middle-saturation cyan.

While Wholehog OS allows you to control the CMY or RGB parameters of fixtures directly, this method has several disadvantages:

- With both the RGB and CMY systems, it is difficult to remember what combination of settings will achieve the colour you want.

- With both systems, colour and fixture intensity are linked. Under the CMY system, giving all three parameters values above 0% unnecessarily reduces the light output; with the RGB system, fixtures often don't provide a separate intensity parameter so you have to control it with the colour parameters. However, it is usually much more convenient when programming to keep colour and intensity completely separate.
- The different colour systems, together with different lamp types used, make it difficult to match colours between fixtures of different types. Furthermore, during crossfades colours tend not to remain matched through the duration of the cue, producing uneven colour fades.

Wholehog OS solves these problems by introducing a third colour system: Hue and Saturation (HS). Under the HS system, a fixture's colour is determined by two parameters:

- **Hue:** the colour's position in the possible range of colours, from red, going through yellow, green, cyan, blue and magenta, and finally returning to red. As the range 'wraps around', you can visualise it as a circle with the colours positioned around the edge, with red at the top, green at the lower right, blue at the lower left, and the intermediate colours in between. The angle between 0 and 360 degrees specifies the hue of the colour: red has a hue of 0 degrees, yellow has a hue of 60 degrees, and cyan has a hue of 180 degrees. See *Figure 15.7, "The Colour Wheel"*.
- **Saturation:** how 'strong' or 'pale' the colour is. Pale colours have low saturations, while strong colours have high saturations. Saturation is specified as a percentage between 0% (white) and 100% (the strongest possible saturation).

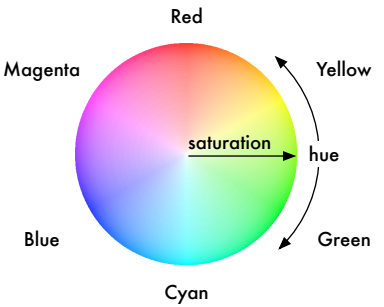


Figure 15.7. The Colour Wheel

When you programme with the HS parameters, Wholehog OS stores all values as HS, and converts them to CMY or RGB as required when sending DMX data to the fixtures. As part of this process, the console is able to match the colours of different fixture types; see *Using Colour Matching (p.167)*.

The Hue and Saturation parameters of fixtures with continuous colour mixing are controlled in the same way as other continuous parameters; see *Continuous Parameters:*

Colour and Beam (p.163). You can also use the Colour Picker and Gel Picker; see *The Colour Picker (p.167)* and *The Gel Picker (p.168)*.

Using Colour Matching

One of the advantages of the Wholehog OS's HS colour system is its ability to match colours across different fixture types. Assigning the Hue and Saturation parameters of two different types of fixtures will set them to the same visual colour (within the limitations of the fixtures), but it might send different DMX values to each. Furthermore, they will maintain that match through a crossfade, ensuring even colour fades.

For colour matching to work, the fixtures need to have a colour calibration in the fixture library; you can check this in the Fixture window:

- Setup → Patch

If the fixture has Yes in the Col Cal column, then it has a colour calibration. Fixtures that are not calibrated will use a standard DMX mapping to determine hue and saturation.

Different types of fixture have different colours for 'white', because of the different types of lamp used. Tungsten lamps have a 'warmer' colour with a higher red and yellow content, while arc lamps usually have a 'cooler' light with more blue in it. One version of white is not more 'correct' than the other, but there needs to be a single agreed 'white point' for all fixtures to match when the Saturation parameter is assigned to 0%. Wholehog OS allows you to assign the White Point to Tungsten or Arc:

1. Setup → Preferences → Misc
2. Choose between Arc and Tungsten.

In a theatrical environment where tungsten sources are more common tungsten white is likely to be most appropriate base. In other environments predominantly using arc sources, it will be more convenient to use arc white.

Important

Before assigning the colour of fixtures using Hue and Saturation, make sure that you have selected your preferred white point. Changing it after you have started programming will change the appearance of previously programmed colours.

The Colour Picker

You can use the Colour Picker to graphically select Hue and Saturation values. To open the Colour Picker:

- Hold down the Open key and select HS Picker.

Or:

- Pig + Open + Colour

There is also a button to open the Colour Picker in the Colour Directory window.

The Colour Picker will change its display according to the fixture selection:

- With no fixtures selected, you just see the colour wheel with saturated colours around the outside, and paler colours towards the centre.
- When a calibrated fixture is selected, a dashed line will be superimposed on the colour wheel. This line represents the fixture's gamut, or range of colours that it can achieve. To select any colour within this range, simply click on it. The new selection will be marked by a superimposed cross and circle. If you select a colour outside the fixture's gamut, one marker ('X') indicates the colour that was chosen, while a second ('O') indicates the closest colour that the fixture can produce. The two markers are joined by a line to indicate they are related.
- Fixtures that do not have colour mixing capabilities do not appear in the Colour Picker.
- If you have several different fixture types selected, the lines on the colour picker change to display the range of colours that all of the selected fixtures can achieve (shown as a dotted line), as well as the range of colours that at least one of the fixtures can achieve (shown as a dashed line). When you select a colour, a single target marker ('X') is displayed, connected to a series of 'O' markers, one for each fixture type.
- The Colour Picker also displays the gamuts and markers for fixtures that are currently in the editor, but not selected. These are shown in grey.
- Fixtures that are not color calibrated use a standard HS method and the Colour Picker will appear without any dashed lines.

The Gel Picker

You can use the Gel Picker to select colours matched to traditional gels. Clicking on a button in the Gel Picker sets the Hue and Saturation parameters of the selected fixtures to values that match the selected colour as closely as possible.

You can select colours from the Lee, Rosco E-Colour, Rosco Supergel and GamColor ranges, using the buttons in the toolbar at the top of the window. You can also select whether to match to the gel as it would appear in a Par 64 or similar conventional tungsten source, or in a Source 4, which has a slightly bluer light output.

There is a button to open the Gel Picker in the Colour Directory window.

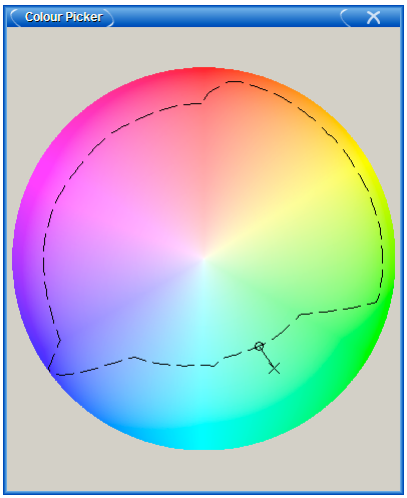


Figure 15.8. The Colour Picker

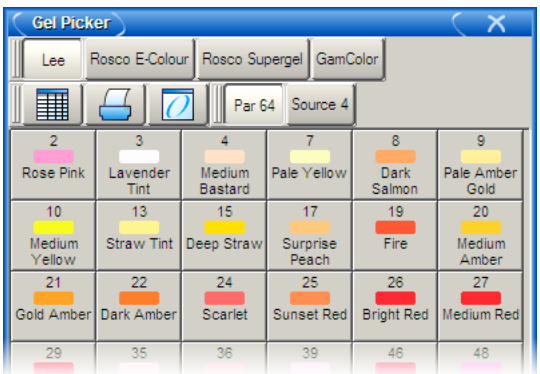


Figure 15.9. The Gel Picker

Note that the Gel Picker colours are not palettes, and will not be embedded in programming; they are simply shortcuts to the appropriate HS values. Gel Picker colours are a closer match when applied to colour calibrated fixtures than non calibrated ones.

15.3.6 Fine Control

Holding the Pig key and moving the encoder wheel allows fine adjustment of the currently selected parameter, so that each turn of the wheel will change the parameter value by a smaller amount. This is useful for making exact adjustments to values.

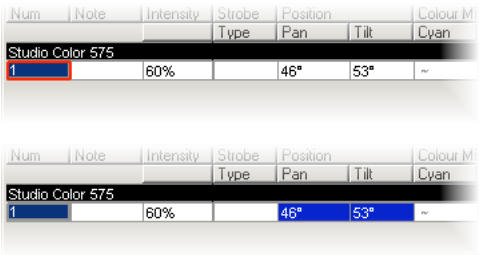
15.3.7 Touching Parameters

When you start to record your programming as cues you will find that only the parameters that you have assigned values to are stored; these are known as 'Hard Values'. This is important because in cuelists values track through until they are changed, and this allows different playbacks to interact to create a single onstage look. For a complete explanation of tracking, see *Tracking (p.8)*.

However you will sometimes want to ensure that a value is stored at its current value in a cue or palette. To do this you can Touch it:

- To touch all parameters of the current selection simply press the Touch key on the Main Toolbar.
- To touch only the parameters of a particular kind, press the appropriate parameter type key followed by Touch. For example:
    - Position Touch : touches all position parameters of the selected fixtures.
- To touch a single parameter you can hold the Touch button while moving that parameter's wheel slightly. The current value will be touched without modification from the parameter wheel.

Untouched values appear in the editor with a white backgound. Once you have touched parameter values they are available for recording in the same way as any value that you have assigned. They are shown with a blue background, indicating that they have been modified:

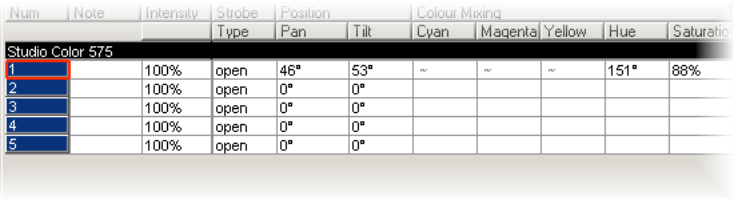


Using Pig + Touch

You can bring parameter values into an editor without touching them using Pig + Touch. As the parameters haven't been touched, they won't be recorded as part of the contents of the editor. This can be useful if you want to have the parameter values in the editor in order to copy them to other fixtures.

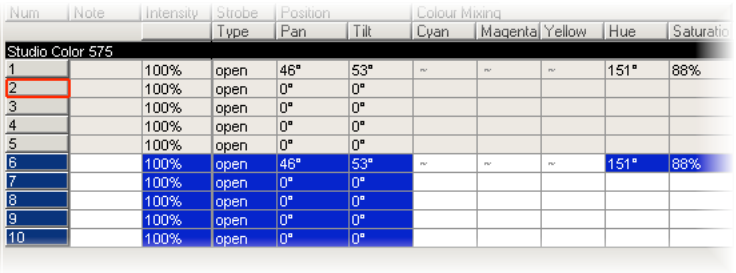
For example, to copy parameter values from fixtures 1-5 that are on stage to fixtures 6-10 in the current editor:

1. **1** Thru **5** Pig + Touch : select the fixtures 1-5, and bring their onstage values into the editor without touching them:



Num	Note	Intensity	Strobe	Position		Colour Mixing				
			Type	Pan	Tilt	Cyan	Magenta	Yellow	Hue	Saturatio
Studio Color 575										
1		100%	open	46°	53°	~	~	~	151°	88%
2		100%	open	0°	0°					
3		100%	open	0°	0°					
4		100%	open	0°	0°					
5		100%	open	0°	0°					

2. Copy **6** Thru **10**, Enter : copy the parameter values to fixtures 6-10:



Num	Note	Intensity	Strobe	Position		Colour Mixing				
			Type	Pan	Tilt	Cyan	Magenta	Yellow	Hue	Saturatio
Studio Color 575										
1		100%	open	46°	53°	~	~	~	151°	88%
2		100%	open	0°	0°					
3		100%	open	0°	0°					
4		100%	open	0°	0°					
5		100%	open	0°	0°					
6		100%	open	46°	53°	~	~	~	151°	88%
7		100%	open	0°	0°					
8		100%	open	0°	0°					
9		100%	open	0°	0°					
10		100%	open	0°	0°					

3. Record : the contents of the editor is recorded with only fixtures 6-10, not 1-5.

If the above example had used Touch instead of Pig + Touch, then you would have to untouch or knockout 1-5 before recording.

Tip

Values with a dark or light blue background in the Programmer or editor are recordable, while those with a white or gray background are not recordable.

15.3.8 Copying Parameter Settings

You can copy the parameter values of one fixture to another. This was known as cloning on the Wholehog II.

Important

If you copy parameter settings between fixtures of different types, only those parameters that the fixtures have in common will be copied.

Using the Command Line

To copy from the current selection:

- Copy **8** Enter : copies the parameters of the current selection to fixture 8.

To copy from specified fixtures:

- Fixture **1** Thru **4** Copy **8** Thru **11**, Enter : copies the parameter settings of Fixtures 1-4 to 8-11.

To copy parameter values from the fixtures of one group to the fixtures of another group within an editor:

- Group **1** Copy Fixture Group **2** Enter : copies the parameter values of the fixtures in group 1 to the fixtures in group 2.

You can add parameter, location and destination masks to any copy command:

- **1** Thru **4** Intensity Copy List **3** Cue **1** Fixture **8** Thru **11**, Enter : copies the intensities of fixtures 1 to 4 in the current selection to fixtures 8 to 11 in cue 1 of cuelist 3.

You can use Copy to reverse the order of values. For example, if fixture 1 is at 10%, fixture 2 at 20%, and fixture 3 is at 30%:

- **1** Thru **3** Copy **3** Thru **1** Enter : the fixtures will now be at 30%, 20% and 10% respectively.

Tip

When you press the Copy key, the words 'Copy to' appear on the command line. This is a useful reminder of the syntax of the copy command.

In the Programmer or Editor Window

You can copy fixture data by using the Copy and Paste commands: click the right-hand mouse or Trackball button on the desired cell(s) in the editor window and select Copy or Paste from the menu.

Alternatively, use the Pig key to copy and paste selected cells:

- Pig + Copy : copy
- Pig + Record : paste

Copy Options

By default, when you copy parameter values from one fixture to another, the console will copy exactly the data from one fixture to another, including any palette references. You can optionally have the hard values from within the referenced palette copied to the destination instead of the palette references:

1. Fixture **1** : select the fixture you want to copy.
2. Copy → More : press the more button on the Copy toolbar.
3. Allow Refs : deselect the Allow Refs button.

4. **8** : select the fixture to copy to.
5. Enter : copies the parameters of Fixture 1 to Fixture 8, converting any palette references to hard values.

Tip

You can copy a fixture to itself with Allow Refs deselected to convert palette references to hard values.

15.3.9 Restoring Default Values

You can reset parameter values to their default settings by using the . (point) key or Pig + . keys as a modifier. Default values for parameters can be set in the Edit Fixtures window.

When using the . key as a modifier, modes such as gobo rotate will be restored to default value but the current mode will remain (gobo rotate). When using the Pig + . keys as a modifier, modes such as gobo rotate will be restored to default value and default mode (index).

To restore the default value for a single parameter of the current selection:

- Press and hold the . key or Pig + . keys and turn the appropriate parameter wheel.

To restore the default values of a parameter kind for the current selection:

- Press and hold the . key or Pig + . keys and press the appropriate kind key.

To restore the default values for all parameters of the current selection:

- Press and hold the . key or Pig + . keys and press the Fixture key.

15.4 Fanning

Fanning allows you to assign a parameter across several fixtures, so that the parameter values are equally spaced. For example, if you have five fixtures all at 50% intensity, you can use fanning easily to assign intensities of 30, 40, 50, 60 and 70% across five fixtures. Note that in this example, the middle value of the five stays the same, and the end values change the most, while the other values change proportionally.

You can fan any values including parameters and timings. For example, you can use fanning with position: suppose that you have seven moving lights on an upstage position, all pointing downstage towards the audience. You could fan the Pan parameters so that the centre fixture still points downstage, and the others turn progressively out to stage left and right.

The fixture selection order is significant when fanning; see *The Selection Order (p.159)*. The value change when fanning is always relative to its current value; if there is no current value the parameter will fan from its default value.

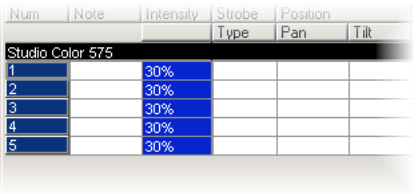
Tip

Choosing the initial, or 'base', value is important when fanning, as the parameter values cannot go below 0% or above 100%. Make sure that you leave enough of the value range for the value to fan into.

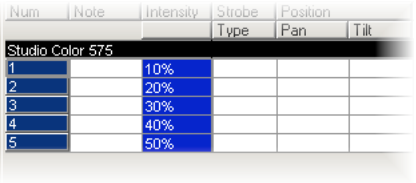
15.4.1 Using the Fan Key

To fan a parameter:

1. **1** Thru **5** @ 30, Enter : select the fixtures and assign the intensities to 30%:



2. Press and hold the Fan key, whilst slowly moving the I-Wheel. The fixtures at either end of the range take the values 10% and 50%, with those in between evenly spread across the intervening range:



15.4.2 In the Programmer Window

To fan a parameter:

1. Select a range of cells, for example the intensity cells of Studio Colors 1 to 5.
2. Set **10** Thru **50**, Enter : The fixtures at either end of the range take the values 10% and 50%, with those in between evenly spread across the intervening range.

You can also fan backwards; continuing the above example:

- Set **50** Thru **10**, Enter : Studio Color 1 has an intensity of 50% and Studio Color 5 an intensity of 10%.

You can also fan several columns at once, fanning both Pan and Tilt for example.

15.4.3 With the Command Line

To fan intensities from the command line:

- **1** Thru **5** @ **10** Thru **50**, Enter : The fixtures at either end of the range take the values 10% and 50%, with those in between evenly spread across the intervening range.

You can also fan backwards:

- **1** Thru **5** @ **50** Thru **10**, Enter : fixture 1 has an intensity of 50% and fixture 5 an intensity of 10%.

15.4.4 Fanning Options

By default, fanning adjusts parameter values proportionally from the centre of the fixture selection. You can have fanning work in other ways:

- **Fan Normal:** As described above, the middle fixture remains unchanged, while the first and last fixtures' values change the most, in opposite directions. For example:

Before fanning:	30	30	30	30	30
After fanning:	10	20	30	40	50

- **Fan From Start:** The first fixture in the selection order remains unchanged, while the last one's value changes the most. For example:

Before fanning:	30	30	30	30	30
After fanning:	30	40	50	60	70

- **Fan From End:** The last fixture in the selection order remains unchanged, while the first one's value changes the most. For example:

Before fanning:	30	30	30	30	30
After fanning:	70	60	50	40	30

- **Fan To Centre:** the middle fixture remains unchanged, while the first and last fixtures' values change the most, in the same direction. For example:

Before fanning:	30	30	30	30	30
After fanning:	50	40	30	40	50

You can set the fanning mode from the Fanning Toolbar:

- Press and hold the Fan key to display the Fanning Toolbar; see *Figure 15.10, "The Fanning Toolbar"*.

All subsequent fans will follow the currently selected fanning mode, until the editor is cleared.

Figure 15.10. The Fanning Toolbar

15.4.5 Multipart Fanning

With the command line, you can enter multipart fanning:

- **1** Thru **9** @ **10** Thru **50** Thru **10** : The fixtures at either end of the range take the value of 10%, that in the middle 50%, and the others spread between:

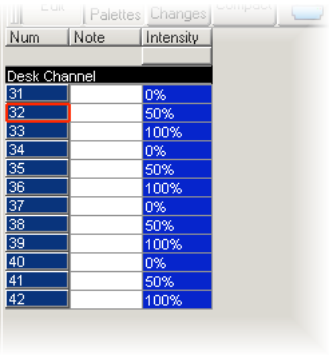
10	20	30	40	50	40	30	20	10

You can fan in as many parts as you want, separating values with the Thru key. Note that multipart fanning only works with the command line, not when editing values in the spreadsheet.

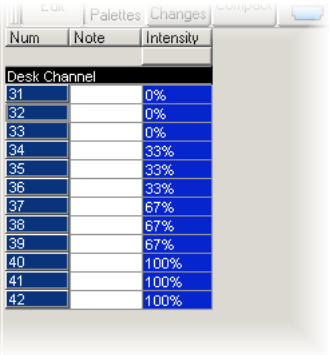
15.4.6 Fanning with Groupings

Grouping allows you to control the way that parameters are fanned to make complex patterns. You can group fixtures in two ways:

- **Repeat:** The repeat is the number of fixtures that are fanned before the fan is repeated. For example, fanning a selection of twelve fixtures with a repeat of three would result in four identical fan patterns (or 'parts'), each with three fixtures in:



- **Buddying:** The buddying number puts the fixtures into 'gangs' that all take the same value. For example, fanning a selection of twelve fixtures with a buddying value of three would result in fixtures 1 to 3 having the same parameter value, fixtures 4 to 6 having the same value, and so on:



You can combine repeats and buddying to create complex patterns very simply. Repeats and buddying are selected from the Grouping Toolbar: press Grouping on the Main Toolbar. The toolbar will remain open to allow you to combine Grouping and Buddying; press Enter or click on the toolbar's Close button when you have made your selection.

Figure 15.11. The Grouping Toolbar

The toolbar displays the current repeat and buddying size, and has buttons to increase and decrease the repeat and the buddying. There are also shortcuts for repeats of 0, 2, 3, 4 and 8, and No Buddying.

Note that grouping and buddying are only used during fanning; the grouping and buddying information is not recorded into cues and palettes, but the resulting parameter values are recorded.

Tip

By default grouping and buddying options are retained even after pressing the Clear key. To reset grouping and buddying options when Clear is pressed, enable the option in Setup → Preferences → Programming.

15.5 Removing Values

As well as assigning values for parameters, you will sometimes want to remove parameter values from editors. For example:

- You no longer want to use a particular fixture in a cue, scene or palette.
- You decide to have the colour of several fixtures controlled by a different cuelist on another playback. To do this, you need to remove colour parameter values, so that they don't take over control of the colour parameters under the LTP rule. See *HTP and LTP (p.11)*.

Tip

If you want to clear the entire contents of an editor, use the Clear key.

15.5.1 Removing Entire Fixtures from an Editor

To remove selected fixtures from an editor (known as 'knocking out'), press the Knockout button on the Main Toolbar. For example:

- Fixture **1** Thru **5** Knockout : removes Fixtures 1 to 5 from the editor.
- Group **2** Knockout : removes all fixtures in Group 2 from the editor.

15.5.2 Removing Specific Parameter Types from an Editor

You can remove specific parameter types from the selected fixtures in an editor:

- Colour, Knockout : Select the parameter type and press Knockout

15.5.3 Removing Individual Parameters from an Editor

You can remove individual parameters from the selected fixtures in an editor:

- Hold Knockout and move the relevant parameter wheel, or press the relevant button on the Slot Toolbar.
- Hold Backspace and move the relevant parameter wheel.
- Backspace + Colour : hold Backspace press the relevant parameter type key; this gives single-handed operation.
- You can remove the values from the currently highlighted cells in the Programmer by pressing Pig + Backspace.

15.6 Separating Parameters

When recording a cue, scene or palette, Wholehog OS only records parameters that have been changed or touched since the last cue was recorded. See *Tracking (p.8)* and *Working with Tracking (p.218)*.

However, some parameter types are treated as a single fixture 'attribute', so for example when you touch one of the three colour parameters of a colour mixing fixture (cyan, magenta or yellow), the other two are automatically touched at either their current value from playback, or at their default values.

For most purposes this provides the results that you would expect but there may be situations where you want to separate the linked parameters, for example to run separate chases with the cyan, magenta and yellow parameters.

By default, Wholehog OS links all position parameters together, and all colour parameters together. You can separate linked parameter types in the Programming pane of the User Preferences window:

1. Setup → Preferences → Programming
2. Toggle separating parameters on and off by pressing the parameter type buttons; see *Figure 15.12, "The Programming pane of the User Preferences window"*.

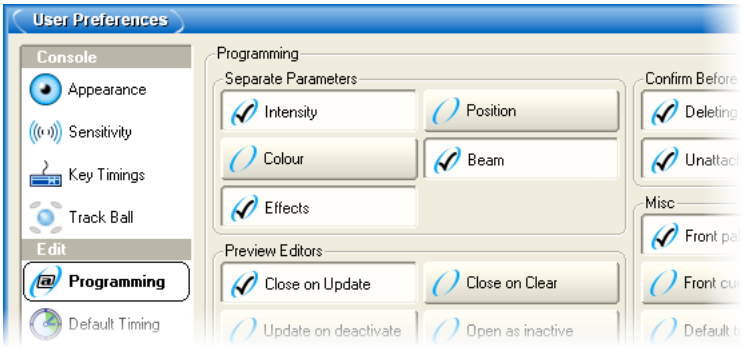


Figure 15.12. The Programming pane of the User Preferences window

Section 16: Working with Groups

Groups are pre-recorded fixture selections, complete with **selection order** information. They are stored in the Group Directory; for general information on working with directories, see *Working with Directories (p.108)*. Groups allow the quick selection of multiple fixtures, and, like ordinary fixture selections, groups can be combined and manipulated in a variety of ways.

Note that group information is only used for making fixture selections in editors, and is not recorded into palettes, cues or scenes.

To Open the Group Directory:

- Open + Group

Or:

- Group, Group

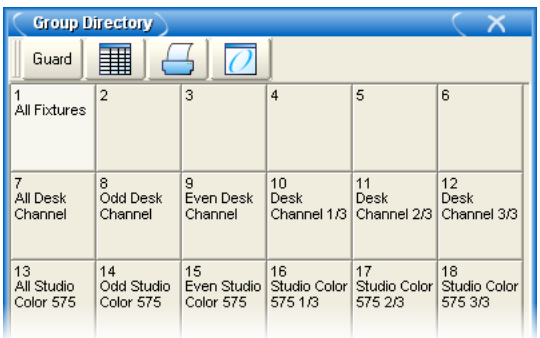


Figure 16.1. The Group Directory

Tip

Wholehog OS can automatically generate a useful set of groups based on the fixtures in your show: see *Creating Palettes and Groups Automatically (p.136)*.

16.1 Recording a Group

When recording a group, only the active fixture selection is recorded, not all the fixtures currently in the editor. To record a group:

1. Select the desired fixtures in the Programmer or editor.

2. Record, Group : the Group Directory window opens.
3. Select the destination location in the Group Directory window.
4. Alternatively, enter a number on the keypad and press Enter.
5. If the destination location is already used, you will be asked to choose an option: *Insert, Merge and Replace (p.184)*.

When you record a group the selection order is also saved. This controls how fanning and effects are applied to the fixtures in the group, and is significant when using the Next and Back buttons; see *The Selection Order (p.159)*, *Fanning (p.173)* and *Working with Effects (p.251)*.

16.1.1 Naming a Group

You can give a group a name that will be displayed in the Group Directory window:

1. Open + Group : opens the Group Directory window.
2. Select the group to be named.
3. Set **[name]** Enter : type in the name.

Tip

You can name a group, cue, scene or palette immediately after recording it by pressing the Set key. The Quickname window will open, and you can enter the name and select OK.

16.2 Using Groups in Programming

You use groups in the same way that you would use fixture selections, for example:

- Group **1**, Enter : selects all the fixtures in Group 1.
- Group **1** @ **50**, Enter : selects all the fixtures in Group 1 and sets their intensity to 50%.
- Group **1** + Fixture **3** @ **50**, Enter : you can mix fixture and group selections.

One particularly useful syntax to use with groups is the / key:

- Group **1** / Group **3** : selects only fixtures that are in both groups.

16.3 Editing Group Contents

To edit a group's contents, select the group within the Programmer or editor, make changes to the selection and re-record the group. Wholehog OS will ask you to choose from *Insert, Merge and Replace (p.184)*. Select Replace to update the group with the new selection.

16.3.1 Removing Fixtures from Groups

You can remove the fixtures that are currently selected in the Programmer or editor from a previously recorded group. If you have a fixture selected in the Programmer or editor that is not in the group, that fixture is ignored.

For example, if you have a group containing fixtures 1-5, and you want to remove Fixture 2:

1. Fixture **2**, Enter : select the fixture you want to remove.
2. Record, Remove : the Remove button is on the Record Options Toolbar at the bottom of the right-hand screen.
3. Group **5**, Enter : removes Fixture 2 from Group 5.

16.4 Deleting Groups

To delete a group:

1. Group **1** Delete : deletes group 1.
2. Click OK to confirm the delete.

Or from the group directory:

1. Press and hold Delete whilst selecting the group to be deleted from directory.
2. Release the Delete key. A dialog will appear asking you to confirm the delete.
3. Click OK.

You can also delete several groups at once:

1. Group **1** Thru **5** Delete : deletes groups 1 through 5.
2. Click OK to confirm the delete.

Or from the group directory:

1. Press and hold Delete whilst selecting all the groups to be deleted from directory.
2. Release the Delete key. A dialog will appear asking you to confirm the delete.
3. Click OK.

Tip

If you prefer not to be asked to confirm the delete action, select Don't Ask Me Again in the confirmation window. You can reenable the confirmation by going to Setup → Preferences → Programming and selecting Confirm before deleting directory items.

16.5 Copying and Moving Groups

To make a copy of a group:

- Group **1** Copy Group **2** Enter : copies the contents of Group 1 to Group 2.

Similarly, to move a group to a new location:

- Group **1** Move Group **2** Enter : moves Group 1 to Group 2.

If the destination group already exists, you will be asked to choose an option: *Insert, Merge and Replace (p.184)*.

To copy parameter values from the fixtures of one group to the fixtures of another group within an editor:

- Group **1** Copy Fixture Group **2** Enter : copies the parameter values of the fixtures in group 1 to the fixtures in group 2.

Similarly with masking options:

- Group **1** Intensity Copy Fixture Group **2** Enter : copies the intensity values of the fixtures in group 1 to the fixtures in group 2.

16.6 Insert, Merge and Replace

When recording or copying a group, if the destination location already has a group recorded in it, you will be prompted with record options of Insert, Merge or Replace.

If you are moving a group, only the Insert option is available.

- **Insert:** creates a new destination group. The new group will be assigned a free location just before the one chosen, using a point number if necessary.
- **Merge:** Incorporates the new information into the destination group.
- **Replace:** Overwrites the group information in that destination.

Tip

If you know that you are about to record, copy or move a group to an existing destination, you can pre-select Insert, Merge or Replace from the Record Options Toolbar. This appears after you press the Record, Copy or Move keys.

Section 17: Working with Palettes

Palettes allow intensity, position, colour and beam parameters to be recorded as easily accessible 'building blocks' to be used when programming. Palettes are stored in a directory accessed by holding the Open key and a parameter type key:

- Open + Colour : opens the Colour Directory.

Alternatively:

- Colour, Colour

For general information on working with directories, see *Working with Directories (p.108)*.

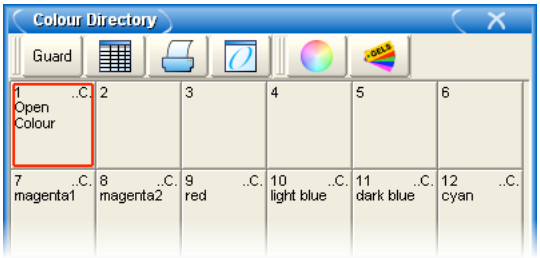


Figure 17.1. The Colour Directory

When you use a palette to assign parameter values in the Programmer, and then record the contents of the Programmer as a scene or cue, Wholehog OS records a reference to the palette rather than numerical values for the parameters. During playback, the console refers to the parameter values stored within the palette when outputting cue data to the stage. Because of this referencing, when you modify a palette's content, the cues and scenes that were programmed using it will, in effect, be automatically updated with the new values. The palette is said to be 'referenced' in the cue. This is a very powerful feature that allows you to make global changes to the show very simply and quickly, rather than having to re-programme every cue individually.

If you wish to make a palette that is just a programming tool, where later changes to the palette will not cause cues, scenes and other palettes recorded with it to be updated, then you can use direct palettes. With direct palettes, actual parameter values are placed into cues, rather than references. See *Direct Palettes (p.197)*.

Tip

Wholehog OS can automatically generate a useful set of palettes based on the fixtures in your show: see *Creating Palettes and Groups Automatically (p.136)*.

17.1 Recording a Palette

By default, Wholehog OS records only parameters of a single type (intensity, position, colour, beam) into a palette. Palettes of each type are held in the relevant directory. You can optionally record more than one parameter type in a palette; see *Recording with Specified Masking (p.194)*.

Also by default, Wholehog OS records the appropriate parameter values of all fixtures in the Programmer or editor, not just those of the selected fixtures. To only record from selected fixtures, see *Recording Only Selected Fixtures (p.196)*.

To record, for example, a position palette:

1. In the Programmer or editor, assign the position parameters of the desired fixtures as you want them in the palette.
2. Record Position : the Position Directory opens.
3. (Palette 2) : choose a location in the directory.

Or, using the command line:

- Record Position **2** Enter

If you leave out the palette location:

- Record Position, Enter

the palette will be recorded in the next available location.

If the destination palette already exists, you will be asked to choose an option: *Insert, Merge and Replace (p.198)*.

17.1.1 Naming a Palette

You can give a palette a name that will be displayed in the Palette Directory:

1. Open + Position : opens the Position Directory.
2. Check that the Guard button is selected, so that you don't accidentally activate a palette when pressing its button in the directory.
3. Select the palette to be named by pressing its button in the directory.
4. Set **[name]** Enter : type in the name.

Tip

To name a palette immediately after recording it, pressing the Set key will open a Quickname window. Enter the palette name and select OK.

17.2 Using Palettes in Programming

In the Programmer or editor, you can apply a palette by selecting it from its directory window. The palette will be applied to the current fixture selection, as long as the palette contains parameter information for the selected fixtures. Doing so assigns the parameter value to be a reference to the palette. A palette that puts all Studio Colors in the rig to deep red will therefore apply this immediately to any Studio Colors that are in the current selection; see *Figure 17.2, "Example of Parameters set to reference a Palette"*.

For example:

1. Open + Colour : open the Colour Directory window.
2. **3** Thru **5** : select the fixtures.
3. (Colour 2) : select the palette from the Colour Directory window.

Or, using the command line:

- **3** Thru **5** Colour **2** Enter

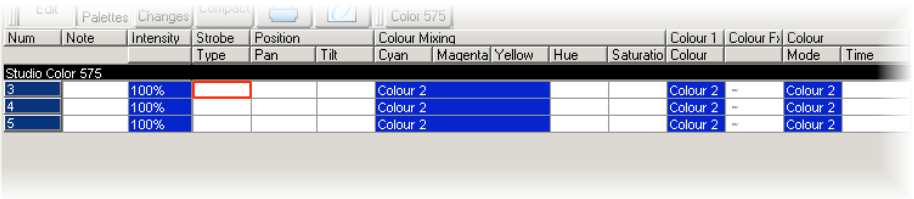


Figure 17.2. Example of Parameters set to reference a Palette

17.3 Editing Palette Contents

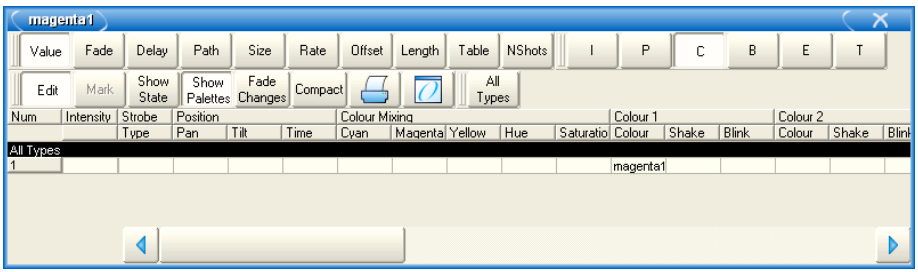


Figure 17.3. The Palette Editor window

You can change the parameter values that are applied when a palette is referenced during playback by editing the palette's contents in an editor window, see *Figure 17.3, "The Palette Editor window"*. For example, to open Colour Palette 2 for editing:

1. Open + Colour : opens the Colour Directory.
2. Open + (Colour 2) : opens the palette editor for Colour Palette 2.
3. Alternatively using the command line : Colour **2** Open
4. Press the Edit button in the editor window to select this as your current editor.

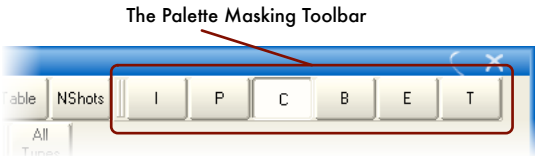
Within the editor, you can assign fixture parameters and timing in the same way as in the Programmer; see *Individual Parameter Timings (p.231)*. Press Update after editing to save the changes to the palette. For more information on working with editors, see *Working with Editors (p.112)*.

Tip

When you open a palette for editing, you may only appear to see one fixture when you recorded several. This is due to the way palettes can be 'global', with a single set of parameter values that can be applied to any fixture; see *Palette Contents: Global, Per Fixture Type, and Per Fixture (p.192)*.

17.3.1 Updating Palettes with Different Parameter Types

Palettes contain one or more parameter types. If you edit a palette and add values for parameters of a type that was not previously in the palette, and then update the palette, these values will not be stored. If you want to change the parameter types that a palette contains, you need to select the type from the Palette Masking Toolbar:



For example, suppose that you wanted to add a gobo (a beam parameter) to the existing Colour Palette 2:

1. Open + Colour : opens the Colour Directory.
2. Open + (Colour 2) : opens the palette editor for Colour Palette 2.
3. Press the Edit button in the editor window to select this as your current editor.
4. Select the B (Beam) button on the Palette Masking Toolbar.
5. Edit the fixture parameter values to assign the required gobo.
6. Press Update to save the changes.

Tip

You can also use the Palette Masking Toolbar to quickly remove all values of a particular parameter type from a palette by deselecting the appropriate button before updating.

17.4 Deleting Palettes

Important

Deleting a palette will remove all references to the palette that have been recorded in cues, scenes and other palettes, and replace the references with numerical parameter values. Creating a new palette in the same location will *not* replace the references, which are removed once the palette is deleted.

To delete a palette using the command line:

1. Colour **1** Delete : deletes Colour Palette 1.
2. Click OK to confirm the delete.

Or, from the palette directory:

1. Press and hold Delete whilst selecting the palette to be deleted from directory.
2. Release the Delete key. A dialog will appear asking you to confirm the delete.
3. Click OK.

Tip

If you prefer not to be asked to confirm the delete action, select Don't Ask Me Again in the confirmation window. You can reenable the confirmation by going to Setup → Preferences → Programming and selecting Confirm before deleting directory items.

17.5 Copying and Moving Palettes

To make a copy of a palette in a new location:

1. Open + Colour : open the Colour directory.
2. Make sure that the Guard button is pressed, so that you do not accidentally apply palettes when trying to select them.

3. Select the palette that you want to copy by pressing its button in the directory.
4. Press and hold the Copy key.
5. Press the button of the location in the directory you want to copy the palette to.

Or, using the command line:

- Colour **2** Copy Colour **3** Enter : copies the contents of Colour Palette 2 to Colour Palette 3.
- Group **5** Colour **2** Copy Colour **3** Enter : copies fixtures that are in Colour Palette 2 and Group 5 into Colour Palette 3.

Similarly, to move a palette to a new location:

- Colour **2** Move Colour **3** Enter : moves the contents of Colour Palette 2 to Colour Palette 3, leaving 2 empty.

If the destination palette already exists, you will be asked to choose an option: *Insert, Merge and Replace (p.198)*.

Tip

References to palettes refer to the palette, not its location in the directory. If you move a palette from location 3 to location 4, references to the palette still refer to it in its new location, not to another palette you put in location 3.

17.6 Record Options

17.6.1 Palette Contents: Global, Per Fixture Type, and Per Fixture

When you record a palette, parameter values can be recorded as global, per fixture type, or per fixture. The three kinds work in different ways when you apply the palette to fixtures during programming:

- **Global:** the palette's parameter values are applied to all selected fixtures that have that parameter. For example, a colour palette containing hue and saturation parameters is applied to all selected fixtures that have hue and saturation.
- **Per Fixture Type:** the palette's parameter values are applied to all fixtures of that type. For example, a palette containing parameter values for Studio Color 575s will only be applied to selected Studio Color 575s.

- **Per Fixture:** the palette's parameter values are applied only to those specific fixtures that are both in the palette and selected in the editor. For example, a palette containing parameter values for Studio Color 575 1 will only be applied to that fixture (and only then if it is selected).

By default, the following rules determine how the palette is recorded:

1. Position palettes are always recorded Per Fixture.
2. If all the fixtures to be recorded have exactly the same parameter values, then the palette is recorded as Global.
3. Otherwise the palette is recorded Per Fixture.

In the palette's editor, the parameter values in a Global palette will appear as All Types. Similarly, a palette with Per Fixture Type values will show them grouped by fixture type; see *Figure 17.4, "A Palette with Global Parameter Values"*, *Figure 17.5, "A Palette with Per Fixture Type Values"* and *Figure 17.6, "A Palette with Per Fixture Values"*. Make sure that you have aggregation turned on; see *Aggregation (p.106)*.

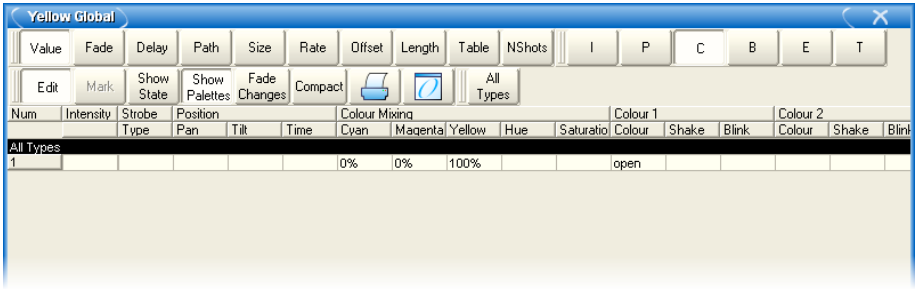


Figure 17.4. A Palette with Global Parameter Values

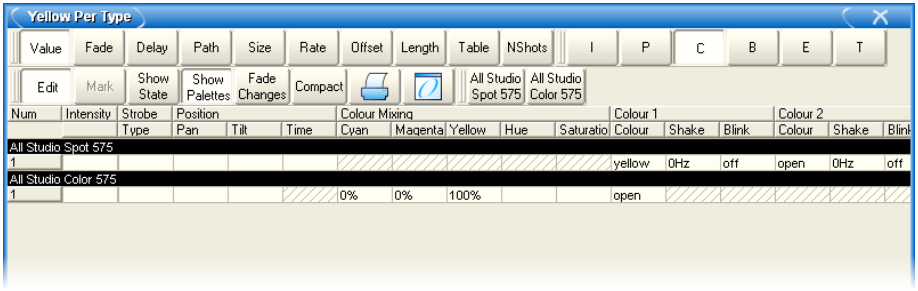


Figure 17.5. A Palette with Per Fixture Type Values

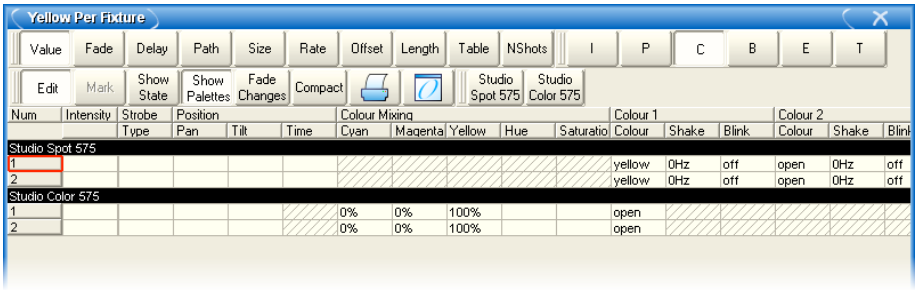


Figure 17.6. A Palette with Per Fixture Values

You can override the default settings using the Record Options Toolbar; for example to record a single fixture's parameter values as per fixture:

1. Assign the parameters of the fixture as required.
2. Press Record.
3. The Record Options Toolbar will appear on the bottom of the right-hand touch screen. Select More, then Per Fixture; see *Figure 17.7, "The More... Section of the Record Options Toolbar"*.
4. Press the key to choose the palette type, for example Colour. The Palette Directory will open.
5. Select the palette location by pressing it in the Palette Directory window.

Figure 17.7. The More... Section of the Record Options Toolbar

Similarly, to force a palette with one of each fixture type to be recorded as Per Fixture Type rather than the default Per Fixture, use the Per Fixture Type button on the Record Options Toolbar.

Forcing a palette to be Per Fixture Type can be useful if you want a palette that contains programming for more than one type of fixture, but that you can apply to any fixture of a type included in the palette. For example, you want to create a 'red' palette that can be applied to both Studio Colors and Studio Spots. If you select the first Studio Spot and make red then select the first Studio Color and make red (with different parameter values) and record this as palette, it will by default be by fixture and work only for those two fixtures. However if you select Per Fixture Type when recording, then the palette will work for *all* Studio Spots and *all* Studio Colors, assigning them the same values as was used to create the palette.

17.6.2 Recording with Specified Masking

Wholehog OS records palettes through layers of masking; the **mask** determines which parameter types of the selected fixtures are included in the palette. By default palettes record just intensity, position, colour or beam information according to the palette type

(that is, they mask out all other parameter types. You can remove masks to record more than one parameter type in a palette, for example combining colour and beam information into one palette.

The Palette Directory will display the parameter types included in each palette, indicated by I for intensity, P for position, C for colour, and B for beam; see *Figure 17.8, "Example of Palettes containing different parameter types"*.

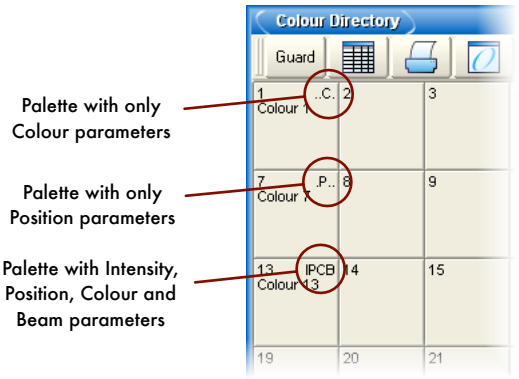


Figure 17.8. Example of Palettes containing different parameter types

Masking Using the Record Options Toolbar

To specify masking when recording a palette using the Record Options Toolbar:

1. Assign the parameters of the fixtures as required.
2. Press Record. The Record Options Toolbar will appear at the bottom of the right-hand touch screen; see *Figure 17.9, "The Record Options Toolbar"*.
3. Select the parameter types to be included in the palette by toggling on or off the buttons Use I for intensity, Use P for position, Use C for colour, Use B for beam, Use E for effects, Use T for timing.
4. Press a key to choose the palette type, for example Colour. The Palette Directory will open.
5. Select the palette location by pressing it in the Palette Directory window.

Figure 17.9. The Record Options Toolbar

Masking Using the Command Line

When recording a palette using the command line, choose the parameters to include before the Record command:

- Colour Position Record Colour **3** Enter : records the colour and position parameters of the Programmer or editor contents into Colour Palette 3.

Recording Only Selected Fixtures

By default, all fixtures currently in the Programmer or editor are recorded. To record only selected fixtures:

1. Fixture **2** : select the fixture(s) you want to record in the palette.
2. Record
3. On the Record Options Toolbar select : More → Selected
4. Position, Enter : records only the position values for fixture 2 into the next available position palette, rather than values for all fixtures in the Programmer.

17.6.3 Palette Timing

Parameter timings that have been assigned in the Programmer or editor can be recorded when you record a palette, and applied when the palette is used. By default, timings are not included in a palette; to include them, you should include time by unmasking it during recording; see *Masking Using the Record Options Toolbar (p.195)*.

You can also assign an overall palette timing when recording the palette. For example, to record a colour palette with a **fade time** of 6 seconds:

1. Assign the parameters of the fixtures as required.
2. Time **6** Enter : assign their fade time to 6 seconds.
3. Colour Time Record Colour **2** Enter : record colour and timing information into Colour Palette 2.

You can also edit timings in the palette's editor. See *Editing Palette Contents (p.189)*.

17.6.4 Reference Palettes

When you record a cue using a palette, a reference to the palette is recorded instead of a numerical value for the parameters. Similarly, you can record palettes using other palettes, so that the new palette contains references rather than numerical values. A palette recorded in this way is known as a reference palette, and is marked in the palette directory window by a REF icon.

Reference palettes are useful when you want to create palettes to use as simple 'building blocks' which you then make more complex building blocks from. For example, you might create a position palette that focuses some Studio Spot 575s onto the lead singer, and further position palettes that position other fixtures onto the remaining band members. You could then make an 'All Band' position palette with one fixture lighting each band member, in which each fixture references another palette, instead of having

parameter values. If the drum riser was later moved, you could adjust the position palette that focused onto it, and the change would not only be updated in all scenes and cues programmed with that palette, but also all programming done with the 'All Band' palette.

By default, palettes are not recorded as reference palettes; any fixture parameters assigned using another palette is recorded as a numerical value. If you want to record a palette as a reference palette, select the Allow Refs record option:

1. Assign the parameters of the fixtures using other palettes as required.
2. Press Record.
3. The Record Options Toolbar will appear at the bottom of the right-hand touch screen. Select More, then press the Allow Refs button.
4. Press a key to choose the palette type, for example Colour. The Palette Directory will open.
5. Select the palette location by pressing it in the Palette Directory window.

17.6.5 Direct Palettes

Normally, when you use a palette to assign parameter values for recording in a cue or scene, a reference to the palette is inserted rather than numerical values. To insert numerical values instead of references, use direct palettes. Cues and scenes recorded using direct palettes will not update if the palette is later changed, because they contain ordinary parameter values rather than references to a palette.

You can use a palette as a direct palette on a one-off basis as you programme, or you can assign it to always act as a direct palette; a direct palette is shown by a symbol DIR in the directory window.

To temporarily use an existing palette as a direct palette when calling it into the Programmer or editor:

- **1** @ Colour **1** : the @ key indicates that the palette should be used in direct mode.

To create a direct palette:

1. Assign the fixtures as required.
2. Record, More : the More button is on the Record Options Toolbar at the bottom of the right-hand screen.
3. As Direct
4. (Position 2), Enter : choose a location for the palette.

To convert an existing palette to a direct palette:

1. Open + Colour : open the appropriate Palette Directory.
2. Set the directory window to spreadsheet view by pressing the button.

3. Select the Is Direct cell for the palette you want to change, and press Set to toggle the value to Yes.

Note that converting a palette to a direct palette will not alter any programming done previously using the palette; cues and scenes already recorded will still contain references to the palette. Only subsequent programming will be effected.

17.7 Insert, Merge and Replace

When recording or copying a palette, if the destination location already has a palette recorded in it, you will be prompted with record options of Insert, Merge or Replace.

If you are moving a palette, only the Insert option is available.

- **Insert:** creates a new destination palette. The new palette will be assigned a free location just before the one chosen, using a point number if necessary.
- **Merge:** incorporates the new information into the destination palette. If the same fixtures and parameters are in both palettes, the new values will replace the old.
- **Replace:** overwrites the palette information in that destination.

Tip

If you know that you are about to record, copy or move a palette to an existing destination, you can pre-select Insert, Merge or Replace from the Record Options Toolbar. This appears after you press the Record, Copy or Move keys.

Section 18: Advanced Programming

18.1 Selecting from What is Onstage

You can select fixtures from what is on stage using the Live key. Fixtures are considered to be on stage if their intensities are non-zero. For example:

- Live Enter : selects all fixtures that are on stage.

You can apply a **mask** to the selection. This allows you to select all fixtures that are on-stage that are assigned to particular values or palettes. For example:

- Live @ **50** : selects fixtures that are on stage at 50%.
- Live @ **50** Thru **80** : selects fixtures that are on stage at 50% to 80%.
- Live @ **0** : selects fixtures that are at 0%.

Using a palette as a mask:

- Live (Blue) : selects fixtures that are on stage that are at their 'Blue' palette settings.

You can use the Live and / keys together to select fixtures that are both live on stage and in a specified fixture selection:

- Live / **1** Thru **5** selects fixtures that are in the range 1 to 5 that are live on stage.
- Live / Group **1** selects fixtures that are in Group 1 that are live on stage.

Note that in all the above examples using the Live key only selects fixtures; it does not alter values in the Programmer or editor.

Tip

Fixtures that do not have an intensity parameter such as a colour scroller are always considered live on stage and will be selected when using the Live key.

18.2 Bringing Parameter Values Into the Programmer

Sometimes you will end up with a look onstage or in a cue, scene or palette that you want to reuse in further programming. There are various ways in which you can bring those fixtures and parameter values into the Programmer or editor.

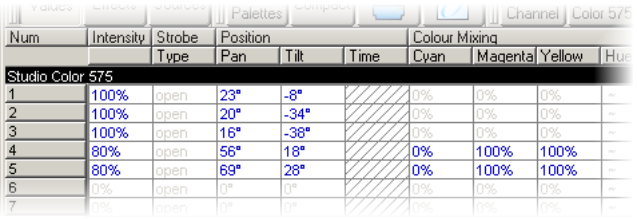
18.2.1 Suck

You can use Suck to assign fixture parameters to the values that they currently have 'on stage'. It doesn't assign parameters that are at their **default value**, or that belong to fixtures with an intensity value of zero. This helps to ensure that you don't have redundant values in the cues that you create, which can cause problems later by blocking values that should track through. The Suck button is located on the Main Toolbar.

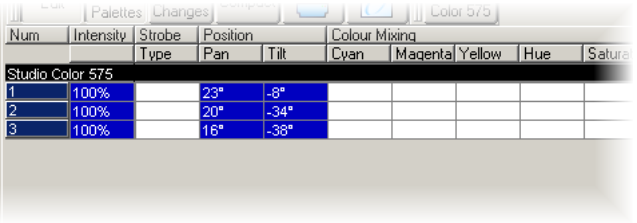
You need to have fixtures selected before using the Suck command. For example, if Group 3 contains Studio Color 575s 1 to 3:

- Group **3** Suck : assigns the fixtures in Group 3 to their current on stage values:

Output



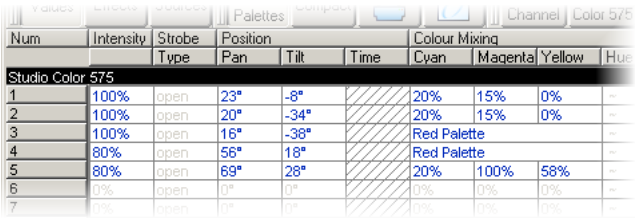
Programmer



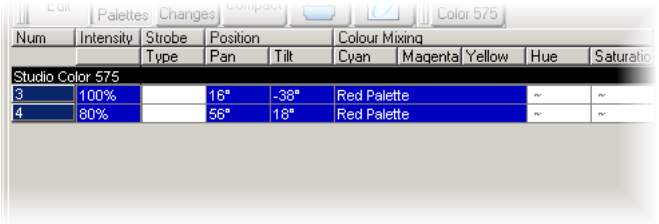
Similarly, you can apply this to palettes, scenes and cues, using the Live key to bring in fixtures and their parameter values that are on stage:

- Live (Red Palette), Suck : fixtures on stage assigned to Red Palette are brought into the Programmer:

Output



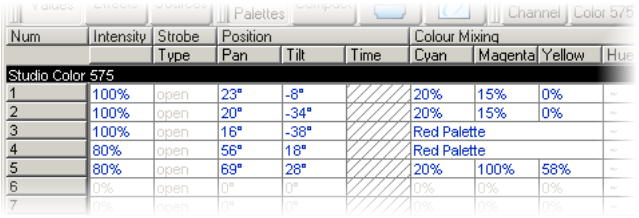
Programmer



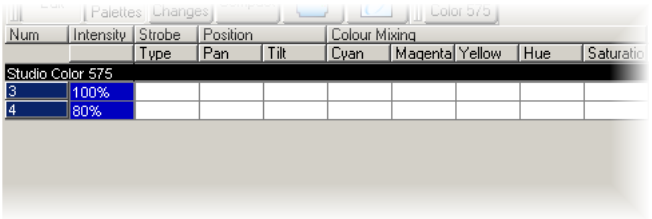
Or, you can use a mask to bring particular parameter type values from specific palettes that are on stage. For example, to bring the intensity values of (Red Palette) into the editor:

- Live (Red Palette), Intensity Suck : the intensity values of fixtures on stage assigned to Red Palette are brought into the Programmer:

Output



Programmer



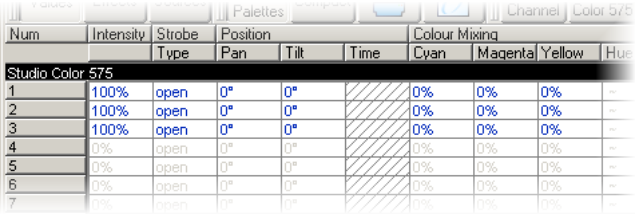
18.2.2 Using Live and Touch

Using Live and Touch together touches all parameters that belong to fixtures that are at non-zero intensity on stage, including parameters at their default values. This is similar to suck, except that it will bring *all* values into the Programmer or editor, including those that are at their default values. The Touch button is located on the Main Toolbar.

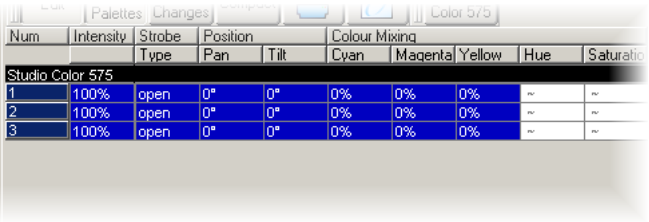
For example, if Studio Color 575s 1 to 3 are in the output with an intensity of 100%:

- Live Touch : brings all the parameters of Studio Color 575s 1 to 3 into the Programmer, not just the intensity values (as suck would):

Output



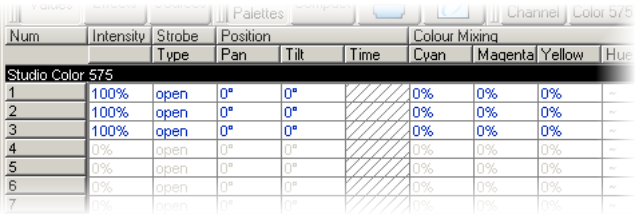
Programmer



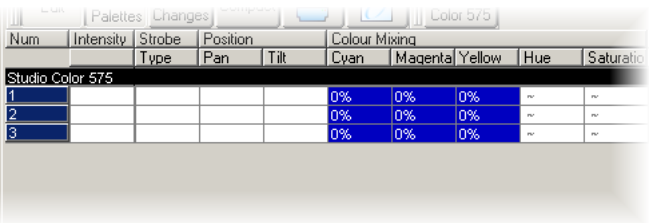
You can select the parameter types to touch:

- Live Colour Touch : only the colour parameters are touched:

Output



Programmer



18.2.3 Using Copy to Bring Values into an Editor

You can bring parameter values from a palette, scene or cue into an editor such as the Programmer using Copy:

- Cue **1** Copy, Enter : copies the contents of Cue 1 of the currently chosen cuelist into the current editor.

You can chose which fixtures or parameter types are copied into the Programmer. For example:

- Cue **1** Position Copy, Enter : copies only the position values from Cue 1 into the current editor.

18.3 Highlight and Lowlight

Pressing the Highlight key temporarily adjusts the selected fixtures to 'open white', with intensity at full and all other parameters at their default settings. This function can be useful when you want to see the beam of a fixture on a lit stage, when assigning focus positions for example. Highlight only changes the parameter values in the output, not in the current cue or in the Programmer or editor, and highlight has the highest priority when the console determines a parameter's output value.

Highlight will remain active until you press the Highlight key again, and you can use the Next and Back keys to highlight in turn each fixture in the current selection.

You can release each parameter from highlight by adjusting its value in the Programmer or editor, letting you modify parameters whilst keeping the fixture beam as visible as possible. For example, suppose that you have a Studio Spot 575 subtly lighting a part of the stage setting with a dark blue breakup gobo, softened using the frost parameter and with the iris controlling the beam size. The piece of set that the Studio Spot is lighting has been moved, and you need to refocus it while keeping the rest of the lighting state on stage so that rehearsals can continue. To do this using Highlight:

1. Select the Studio Spot in the Programmer.
2. Press the Highlight key. The Studio Spot will retain its position on stage, but the intensity will go to full, the colour to white, the gobo and frost to open, and the iris to 100%, so that you can see the beam clearly on the lit stage.
3. Adjust the pan and tilt parameters to position the Studio Spot as required.
4. Adjust the iris parameter to give the correct beam size.
5. Press the Highlight key again to release the colour, gobo and frost parameters from Highlight, so that they return to their original programmed values. The values for pan, tilt and iris retain their new values in the Programmer.
6. Press Update and OK to record the changes in the appropriate cue; see *Auto Update (p.204)*.

18.3.1 Customising Highlight

By default, highlight brings intensity to full, with all colour and beam parameters at their default values. However, you can use a palette to assign the highlight values for each parameter of each fixture. This can be useful as the default highlight values for some parameters may not be what you want; for example, you may prefer to leave zoom, focus and iris settings unaltered by Highlight so that you can see the programmed beam size and edge quality.

To assign a pre-existing palette to be the highlight palette, right-click it in the palette directory and select it as the highlight palette. The highlight palette is shown by the HI icon in the palette directory window.

Tip

You can use masking when creating the highlight palette to ensure that all the required parameter types are included; see *Recording with Specified Masking (p.194)*.

18.3.2 Lowlight

By default, the parameters of fixtures that are not selected when you use highlight remain at their current output values. You can customise the output values of these parameters during highlight by creating a lowlight palette. For example, you could create a lowlight palette that sets the intensity of all fixtures to 30%, to give the highlighted fixture greater contrast.

Note that lowlight only affects parameter values of the non-selected fixtures in the current editor. Parameter values being output by playbacks will not be affected.

To assign a pre-existing palette to be the lowlight palette, right-click it in the palette directory and select it as the lowlight palette. The lowlight palette is shown by the LO icon in the palette directory window.

Tip

You can use masking when creating the lowlight palette to ensure that all the required parameter types are included; see *Recording with Specified Masking (p.194)*.

18.4 Auto Update

When you are programming a complex show, the look on stage may be built up from cuelists and scenes on several masters. You can change the look by assigning fixture parameter values in the Programmer, but it is difficult to know which cue or scene is contributing which values to the total on stage. Wholehog OS's Auto Update feature automatically suggests the appropriate cues, palettes and scenes to merge the changes into, allowing you to choose how the updates are performed.

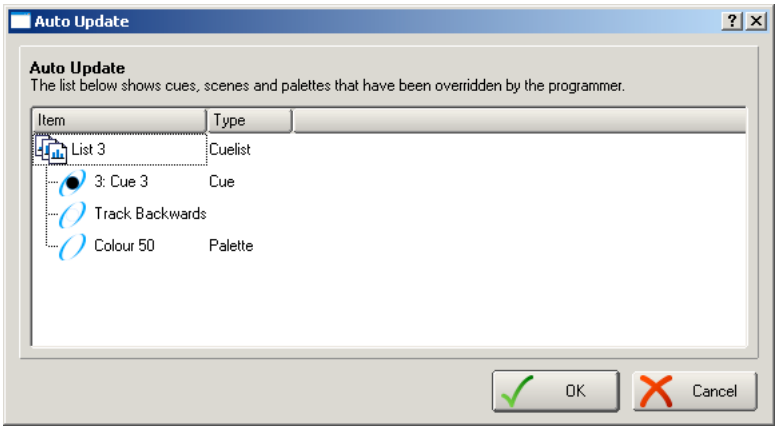


Figure 18.1. The Auto Update window

When you have finished editing in the Programmer you can merge the parameter values into the currently playing cues, palettes and scenes by pressing the Update key. The Auto Update window will open, showing which cuelists, cues, palettes and scenes are contributing to the look on stage so that you can choose which to update

For cuelists, you have several choices:

- Either update the current cue in the cuelist, or track the programming backwards so that the new values are merged into the last cue with a hard value for that parameter; see *Tracking Values Backwards When Recording (p.218)*.
- If you have existing programming that refers to a palette, you can choose to update the palette instead of adding new parameter values to a cue. In this case, these updates will be performed first, and anything left in the Programmer after this will be used to update the selected cue or Track Backwards.

For scenes, you have the option to merge the programming into the scene, or into the palettes that are referred to in that scene.

Once you have chosen your options, press OK to perform the update. Note that the parameter values remain in the Programmer.

Tip

If there is no playback on stage when you press Update, the Auto Update window will not appear and the Update key press is ignored.

When you press the Update key, the Update Toolbar will also appear; see *Figure 18.2, "The Update Toolbar"*. This allows you to select which parameter types are updated, whether changes should track forwards, and whether references should be allowed when updating palettes. See *Recording with Specified Masking (p.194)*, *Stopping Values from Tracking Forward (p.219)* and *Reference Palettes (p.196)*.

Figure 18.2. The Update Toolbar

18.5 Editing Discreetly

It is often useful to make changes to parameter values discreetly, or without them appearing on stage at all; during a rehearsal or performance for example. To do this, use Wholehog OS's Fade Changes and Blind functions.

18.5.1 Fade Changes

If you select the Fade Changes button in an editor window, any changes you make will appear on stage over the current time settings for the changed parameters. For example, if you have intensity values in the Programmer with a fade time of ten seconds, and you select all of the fixtures and press @ **0** Enter, all of the lights would fade to 0 over 10 seconds. This is useful for making changes on the fly during a performance.

Parameters that don't have timing values in the Programmer will fade in the default time, which you can assign in the Default Timing pane of the User Preferences window:

- Setup → Preferences → Default Timing

Press the Fade Changes button again to revert to having parameter values appear in the output instantly.

To view and assign time values for parameters, see *Individual Parameter Timings (p.231)*.

Tip

You can set a trackball key turn Fade Changes on and off; see *Trackball Keys (p.69)*.

18.5.2 Blind

Blind mode allows you to continue programming and editing cues, groups, palettes and scenes without changing the onstage parameter values of fixtures. The Blind key is located above the Trackball; when in blind mode, the Blind key will illuminate.

Note that when you turn off blind mode all parameter values that you have changed in the Programmer or editor will instantly appear on stage.

To exit blind mode gracefully, hold down the Pig key while pressing Blind; parameters will fade to their new values in the assigned or default fade time. Alternatively, select Fade Changes in the editor you are using prior to turning blind on or off.

Tip

Using Pig + Blind on Wholehog OS is equivalent to using the Try Cue key on the Wholehog II.

18.6 Parking

Sometimes it is useful to lock certain parameter values of fixtures independently from programming, playback and the Grand Master. For example, you might want to lock a particular dimmer at a certain level as a working light, or point a fixture to provide light for maintenance whilst a rehearsal or programming is in progress. Park is also helpful for dealing with a fixture malfunction, locking its pan and tilt so that it doesn't make a noise as it tries to move during the show.

Parking holds a fixture's parameters on stage, but still allows you to edit the data in the Programmer or other editors.

To park fixture parameter values:

1. Fixture **1** @ **50** : Select fixture(s) and assign the parameter(s) you wish to park.
2. More → Park : Select Park from the More options of the Main Toolbar.

To unpark fixtures, select the fixtures, set any value for the parked parameters, and hold the Pig key while pressing Park.

Both the park and unpark commands will accept a parameter mask on the command line, for example:

- Position Park : parks only position parameters of the selected fixtures.

18.6.1 Viewing and Editing What is Parked

You can view which fixtures have parked parameters in the Fixture window and the Output window, and you can view and edit parked parameters in the Parked Output window. Parked parameters are also indicated in the Wheels Toolbar.

The Fixture Window

To view which fixtures have parked parameters in the Fixture window:

- Open + Fixture : the Fixture window opens; see *Figure 18.3, "The Parked column of the Fixture window"*.

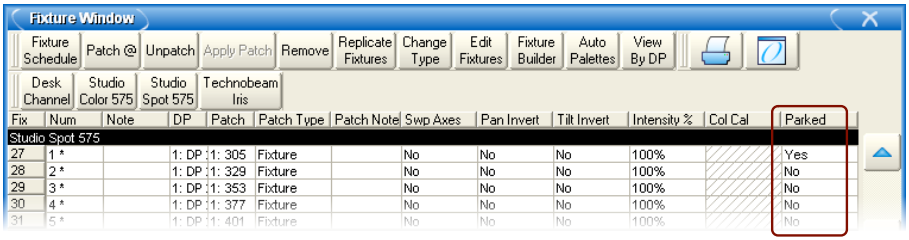
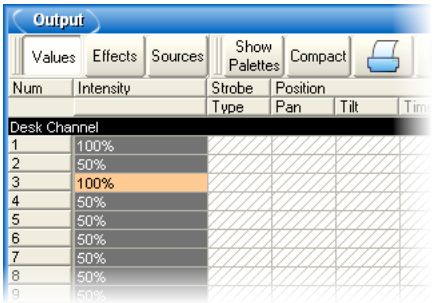
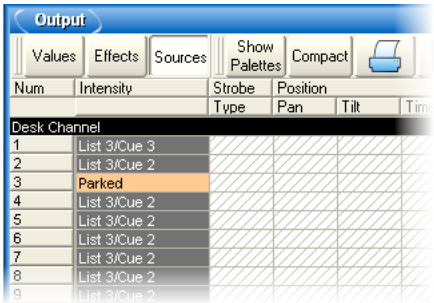


Figure 18.3. The Parked column of the Fixture window

The Output Window

Parked parameters are shown in the Output window with black text on an orange background. When the Output window Source view is selected the word 'Parked' is displayed.





The Parked Output Window

You can view and modify the parked settings of fixtures in the Parked Output window; see *Figure 18.4, "The Parked Output window"*. To open the Parked Output window:

- Open + Parked : the Parked button is on the toolbar that appears when you press the Open key.

Within this window you can edit parameter values in the same way as in any editor. You can knockout fixtures or parameter values to stop them being parked, or add or modify parameter values to park them.

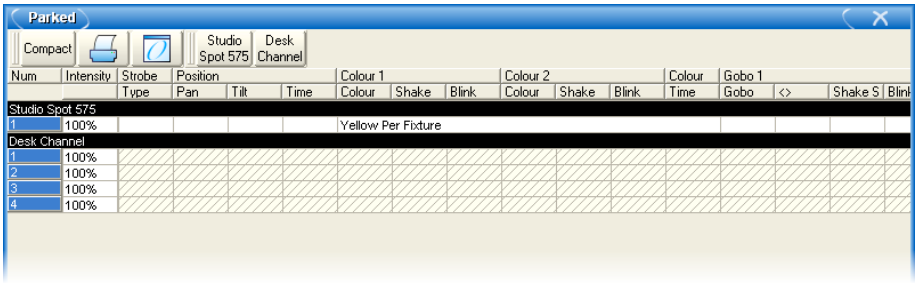


Figure 18.4. The Parked Output window

The Wheels Toolbar

Parked parameters are shown in the Wheels Toolbar with an orange background or hatch pattern.

- **Solid orange background:** all selected fixtures have the parameter on this wheel parked.
- **Cross Hatch orange background:** all selected fixtures have a parameter parked that prevents controlling the parameter on this wheel. For example, if Hue is parked, Cyan, Magenta, and Yellow will display with a cross hatch pattern on the Wheels Toolbar.
- **Diagonal line orange background:** some of the selected fixtures have the parameter on this wheel parked.

Section 19: Working with Cues

Every cue created on Wholehog OS is given a number and assigned to a cuelist. A cue number is specific to the current cuelist, not the entire console, so there can be a Cue 1 for Cuelists 1, 2 and 3. For more on cuelists, see *Working with Cuelists (p.243)*.

You can refer to a cue either by its cuelist or by the master it is currently on:

- List **1** Cue **2** : refers to Cue 2 of Cuelist 1.
- Alternatively, you can use the / key : List **1** / **2**
- Cue **1** / **2** : refers to Cue 2 on Master 1.
- Cue **1** : if you don't specify a cuelist or master, the currently chosen master is assumed.

19.1 Recording a Cue

To record a look created in the Programmer or editor as a cue within a cuelist, you need to specify a cuelist and cue number to record to. If the cuelist does not yet exist, Wholehog OS will create it automatically.

For example, to record Cue 4 into Cuelist 2:

- Record List **2** Cue **4** Enter

19.1.1 Recording to a Cuelist on a Master

You can choose a master rather than a cuelist when recording a cue. This will record the cue to the cuelist currently attached to the chosen master, or create a cuelist if it doesn't exist. For example:

1. Press the Choose key above Master number 10. The Choose key will light up to show that Master 10 is the chosen master.
2. Record **1** Enter : records Cue 1 in the cuelist attached to Master 10, creating it if necessary.

To record more cues:

- Record **1.5** Enter : inserts a new cue numbered 1.5 into the cuelist on the currently chosen master.
- Record Enter : appends the cue to the end of the cuelist attached to the currently chosen master.

- Record Choose : appends the cue to the end of the cuelist of the selected master. This allows the current master to remain chosen while recording cues onto other masters.

19.1.2 The Contents of the Programmer after Recording a Cue

When you record a cue, the values remain in the Programmer, but the background colour changes from blue to grey. This indicates that the parameter values in the Programmer are no longer **touched**, and so are available for recording to another cuelist, but not to the same cuelist. You can keep the values in the Programmer to act as the basis for the next cue on the same list, but because of tracking, only the *changed* parameter values will be recorded. For an overview of tracking, see *Tracking (p.8)*.

19.1.3 Insert, Merge and Replace

When recording, copying or moving a cue, if the destination location already has a cue recorded in it, you will be prompted with record options of Insert, Merge or Replace:

- **Insert:** creates a new destination cue. The new cue will be assigned a free location lower than the one chosen, using a point number if necessary.
- **Merge:** Incorporates the new information into the destination cue. If the same fixtures and parameters are in both cues, the new values being merged will take priority.
- **Replace:** Overwrites the cue information in that destination.

If you are copying a cue, all three options are available. If you are moving a cue, only the Insert option is available.

Tip

If you know that you are about to record, copy or move a cue to an existing destination, you can pre-select Insert, Merge or Replace from the Record Options Toolbar. This appears after you press the Record, Copy or Move keys.

19.1.4 Numbering Cues

If you leave out the cue number when recording cues, Wholehog OS will give the cue the next whole number in the list. If you specify a cue number, you can use numbers with up to five digits before the decimal and four digits after; for example: **11111.1111**. This can be useful to insert cues between previously recorded ones.

You can later renumber a complete cuelist; see *Renumbering Cues within a Cuelist (p.215)*.

19.1.5 Naming Cues

You can give a cue a name that will be displayed in the Cuelist window and on the Playback Bar:

1. Open + Choose : opens the Cuelist window of the selected master.
2. Select the cue's name cell.
3. Set **[name]** Enter : type in the name.

Tip

To name a cue immediately after recording it, press the Set key. This will open a Quickname window. Enter the cue name and select OK.

19.2 Record Options

19.2.1 Recording Selected Fixtures Only

Normally, recording a cue records the total contents of the Programmer or editor, but you can choose to record only the currently selected fixtures. For example:

1. Select the fixtures that you want to record.
2. Record, More : the More button is on the Record Options Toolbar at the bottom of the right-hand screen.
3. Selected : press Selected on the Record Options Toolbar.
4. Choose : records the selected fixtures as a new cue in the cuelist on the selected master.

19.2.2 Removing Fixtures and Parameter Values from Cues

You can remove the contents of the Programmer or editor from a previously recorded cue. For example, you might have made changes to a cue, and you want the changes to track through subsequent cues (see *Tracking (p.8)* for an explanation of tracking). To remove parameter values:

1. Ensure that the parameters that you want to remove are in the Programmer. The parameter values do not matter, only that the parameters have values.
2. Record, Remove : the Remove button is on the Record Options Toolbar at the bottom of the right-hand screen.
3. Cue **5**, Enter : removes the selected parameter values from Cue 5.

To remove a whole fixture ensure that all parameters are selected. You can do this by selecting the fixture and pressing the Touch button on the Main Toolbar.

19.3 Deleting Cues

To delete a cue:

1. Cue **1** Delete : deletes Cue 1 in the currently chosen cuelist.
2. Click OK to confirm the delete.

Or:

1. List **1** Cue **1** Delete : deletes cue 1 in cuelist 1.
2. Click OK to confirm the delete.

Tip

If you prefer not to be asked to confirm the delete action, select Don't Ask Me Again in the confirmation window. You can reenable the confirmation by going to Setup → Preferences → Programming and selecting Confirm before deleting directory items.

You can delete a range of cues:

1. List **1** Cue **1** Thru **4** Delete : deletes Cues 1 to 4 in Cuelist 1.
2. Click OK to confirm the delete.

Tip

To delete a cue 'cue only', so that changes caused by deleting the cue don't track through to later cues, see *Stopping Changes from Tracking Forward when Deleting a Cue (p.220)*.

19.4 Copying and Moving Cues

Tip

Copying or moving cues affect hard values only; the cue you wish to copy/move may also contain tracked values that create the current onstage state. If you wish to copy this look rather than just changes made by the current cue, use Copy and Move with State; see *Using State (p.221)*.

19.4.1 Copying Cues

To make a copy of a cue in the same cuelist:

1. Make sure that the cuelist you want to work with is on the currently chosen master.
2. Cue **1** Copy Cue **2** Enter : copies the contents of Cue 1 to Cue 2.

To copy in a cuelist other than the chosen one, or to copy between cuelists, specify the cuelist with the List key. For example:

- List **1** Cue **1** Copy List **2** Cue **2** Enter : copies the contents of Cue 1 of Cuelist 1 to Cue 2 of Cuelist 2.

To copy a range of cues:

- List **1** Cue **1** Thru **4** Copy List **2** Cue **2** Enter : copies the contents of cues 1 to 4 of Cuelist 1 to Cuelist 2, starting at Cue 2.

If the destination cue(s) already exist, you will be asked to choose an option: *Insert, Merge and Replace (p.212)*.

19.4.2 Moving Cues

To move a cue to a new location:

- Cue **1** Move Cue **2** Enter : moves the cue from 1 to Cue 2, effectively removing Cue 1.

Similarly, to move between cuelists:

- List **1** Cue **1** Move List **2** Cue **2** Enter : moves Cue 1 of Cuelist 1 to Cue 2 of Cuelist 2, effectively removing Cue 1 from Cuelist 1.

If the destination cue(s) already exist, you will be asked to choose an option: *Insert, Merge and Replace (p.212)*.

19.5 Renumbering Cues within a Cuelist

If your cuelist has many point cues (1.2, 1.5, 2.5, etc.) or if cues have been deleted, you may wish to renumber the cues so that they are all whole numbers. You can renumber cuelists using the Renumber button; press More on the Main Toolbar:

- Renumber, Choose : renumber cues in the cuelist on the selected master, starting at 1 and increasing by 1.
- List **1** Cue **3** Thru Renumber, Enter : renumber all cues from Cue 3 upwards in Cuelist 1, starting at Cue 3 and increasing by 1.

- List **1** Cue **3** Thru **10** Renumber, Enter : renumber Cues 3 through 10 in Cuelist 1, starting at Cue 3, finishing at Cue 10, with other cue numbers equally spaced between.

Alternatively, you can specify the range of new numbers to be given:

- List **1** Cue **3** Renumber **5**, Enter : renumber cue 3 as cue 5, in cuelist 1.
- List **1** Cue **3** Thru **10** Renumber **20**, Enter : renumber cues 3 through 10, in cuelist 1, with new numbers starting at 20. The rest of the new numbers will have the same order and spacing as before.
- List **1** Cue **3** Thru **10** Renumber **20** Thru **30**, Enter : renumber cues 3 through 10 in cuelist 1, starting at 20, finishing at 30, with other cue numbers equally spaced between.

Note that renumbering does not moves cues within the cuelist; if you try to renumber Cue 5 as Cue 3, you will get an error message. You should use Move for this purpose; see *Copying and Moving Cues (p.214)*.

Important

Using Renumber will affect the number column and numeric entries in the Name column. Also, renumber will not rewrite macros or links that refer to renumbered cues; you will need to update these manually.

19.6 Editing Cue Contents

You can edit the contents of a cue in an editor window: see *Figure 19.1, "The Cue Editor window"*. To open the current cue of the chosen master:

- Cue, Open

Or:

- Cue, Cue

To open a specific cue in a specific cuelist, for example Cue 2 of Cuelist 1:

1. Open + List : opens the Cuelist Directory window.
2. Open + (Cuelist 1) : opens the Cuelist window for Cuelist 1.
3. Open + (Cue 2) : opens the Cue Editor for Cue 2.

Alternatively, using the command line:

- List **1** Cue **2** Open

You can also preview a cue using View Cue in the Cuelist window; however, you will need to press the Edit button in the Cue Editor window to select this as your current editor in order to make any changes.

If the cue to be edited is on stage, selecting Edit will enable blind mode until changes are updated, or Edit is deselected, see *Blind (p.206)*. You can leave the mode otherwise by pressing the Blind key.

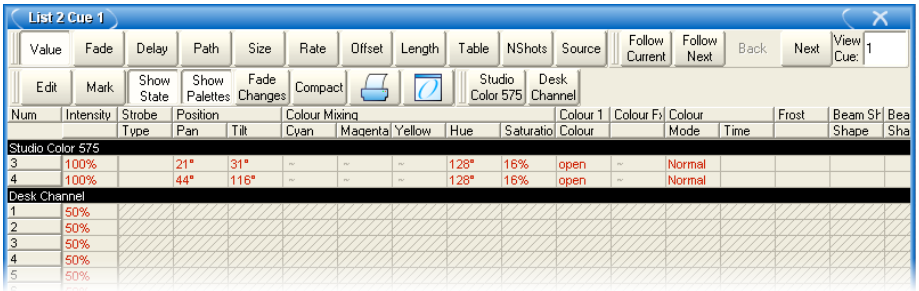


Figure 19.1. The Cue Editor window

Within the editor, you can assign fixture parameters and timing in the same way as in the Programmer. See *Selecting Fixtures, Modifying Parameters (p.155)*. Once you have made changes be sure to press the Update key to save them, the Cue Editor will then automatically close.

19.6.1 Viewing Different Cues in the Editor

In addition to the usual functions available in all editors, described in *Working with Editors (p.112)*, the Cue Editor window has controls that allow you to select which cue is displayed:

- **Next and Back:** The Next and Back buttons to allow you to easily step through the cues in the cuelist to view or edit them.
- **View Cue:** You can jump to another cue by typing its number in to the View Cue box and pressing the Enter key.
- **Follow Current:** If you select the Follow Current button, the Cue Editor window will always show the current cue as the cuelist is played back. If you use Next, Back or View Cue to view another cue, or if you edit the current cue, then Follow Current is disabled.
- **Follow Next:** This is similar to Follow Current, except that the next cue is displayed rather than the current one. When the last cue is played, the first cue in the cuelist is displayed.

Tip

As well as the buttons in the Cue Editor window, you can also step through the cues using the Next and Back keys while holding down the Cue key.

19.7 Working with Tracking

Wholehog OS uses tracking, which gives it some very powerful abilities. Tracking can also add extra complexity, but Wholehog OS has several functions that make working with tracking straightforward. For a detailed discussion about tracking, see *Tracking (p.8)*.

19.7.1 Tracking Values Backwards When Recording

You can use the Track Backwards feature when you record a cue to assign the parameter values to the last cue they appeared in, rather than the cue being recorded. For example, suppose that you have a series of cues with intensity values for three fixtures:

Fixture:	1	2	3
Cue 1	50	50	50
Cue 2	60	60	
Cue 3	70		

If you assign all three fixtures to 100% and record with merge into Cue 3 (see *Insert, Merge and Replace (p.212)* for recording with merging), you would get these values:

Fixture:	1	2	3
Cue 1	50	50	50
Cue 2	60	60	
Cue 3	100	100	100

However, if you did the same thing with Track Backwards, you would get:

Fixture:	1	2	3
Cue 1	50	50	100
Cue 2	60	100	
Cue 3	100		

The value of 100% has been applied to the last cue that the intensity parameter had a value in.

If you Track Backwards a parameter that hasn't been given a value since the start of the cuelist, the value is added to the first cue in the cuelist.

To record a cue with Track Backwards, select the Backwards button on the Record Options Toolbar that appears after you press the Record key:

1. Fixture **1** Thru **3** @ **100** Enter.
2. Record Cue **3**
3. Select Track Backwards on the Record Options Toolbar.

4. Enter

Tip

You can also Track Backwards when you update cues using Auto Update; see *Auto Update (p.204)*.

19.7.2 Stopping Values from Tracking Forward

When you insert a new cue into a cuelist, or merge changes into an existing cue, the new values track forwards into later cues in the cuelist. For example, your cuelist has Cues 1 to 4, and Cue 1 has Fixture 1 programmed into it at 30%, so that it tracks through the subsequent cues:

Fixture:	**1**	**2**	**3**
Cue 1	30	50	100
Cue 2		100	60
Cue 3			50
Cue 4		40	

You now insert a Cue 2.5 with Fixture 1 at 100%. Because cues 3 and 4 do not change the intensity of Fixture 1, it will remain at 100% for the rest of the cuelist:

Fixture:	**1**	**2**	**3**
Cue 1	30	50	100
Cue 2		100	60
Cue 2.5	100		
Cue 3			50
Cue 4		40	

You may want to record the new cue so that parameter values in the new cue return to their original value in the next cue (so that the inserted cue does not change the original looks due to tracking):

Fixture:	**1**	**2**	**3**
Cue 1	30	50	100
Cue 2		100	60
Cue 2.5	100		
Cue 3	30		50
Cue 4		40	

Wholehog OS allows you to record a cue between other cues without destroying existing tracking values. To do this, record the inserted cue without tracking forwards by deselecting the Forward button on the Record Options Toolbar that appears after pressing the Record key. For example:

1. Press the Record key.
2. Deselect Forward on the Record Options Toolbar.
3. Cue **2.5** Enter : insert Cue 2.5 into the cuelist on the currently chosen master.

This is sometimes refered to as recording 'cue only' as the changes only affect the recorded cue and do not track into subsequent cues. Note that you can only turn tracking forwards off when you insert a new cue into a cuelist or when you merge values into a cue, not when adding new cues to the end of a cuelist.

Important

When recording or merging as 'cue only' any parameter values that did not previously exist in a cuelist, an 'Off' indication will be placed into the subsequent cue for these parameters. This Off indication will release the parameter value back to its previous state (as if it were not programmed in the list).

19.7.3 Stopping Changes from Tracking Forward when Deleting a Cue

When you delete a cue, this can have unexpected consequences on later cues in the cuelist if the deleted cue contained parameter values that tracked through to contribute to the state of the later cues. For example, you have the following cues:

Fixture:	**1**	**2**	**3**
Cue 1	30	50	100
Cue 2	100	80	60
Cue 3			50
Cue 4		40	

If you now delete Cue 2, Fixture 1 will track from Cue 1 through Cues 3 and 4 at 30%, rather than going to the expected 100% in Cues 3 and 4:

Fixture:	**1**	**2**	**3**
Cue 1	30	50	100
Cue 3			50
Cue 4		40	

You can prevent this happening by deleting the cue 'cue only' which adds any values that previously tracked through from the deleted cue into the next cue:

Fixture:	**1**	**2**	**3**
Cue 1	30	50	100
Cue 3	100	80	50
Cue 4		40	

To delete a cue without tracking the changes forwards:

1. List **1** Cue **3** : select the cue to be deleted.
2. Press and hold the Delete key. The Record Options Toolbar will appear.
3. Deselect Forward from the Record Options Toolbar.
4. Release the Delete key.

19.7.4 Blocking Cues

Blocking cues prevent changes made earlier in the cuelist from tracking through to subsequent cues in the cuelist. See *Tracking Through Changes (p.9)*.

Using State

You can create blocking cues using the State button on the Record Options Toolbar. For example, suppose that you have the following cues:

Fixture:	1	2	3
Cue 1	30	50	100
Cue 2		100	60
Cue 3			50
Cue 4		40	

to turn Cue 4 into a blocking cue, you copy it to itself 'with state':

1. Cue **4** Copy State Cue **4** Enter : the State button is on the Record Options Toolbar that appears when you press Copy.
2. Select Replace.

The values are now:

Fixture:	1	2	3
Cue 1	30	50	100
Cue 2		100	60
Cue 3			50
Cue 4	30	40	50

Because of tracking, when you copy a cue to another location you only copy the **hard values**, so you do not create a new cue that actually represents the on-stage look that you would get by running the original cue.

To copy both hard and tracked values, you can use Copy and State:

- List **1** Cue **5** Copy State List **2** Cue **1** Enter : creates a new cue in Cuelist 2 that is the state of Cue 5 in Cuelist 1.

19.7.5 Unblocking

Unblocking removes redundant hard parameter values. A parameter value is redundant in a cue if it is the same as the value for that parameter in the previous cue in the same cuelist. For example:

Channel:	1	2	3	4
Cue 1	100	0	50	50
Cue 2	50		100	
Cue 3	50	100	100	50

In this cuelist, the values for channels 1, 3 and 4 are redundant in cue 3. After unblocking, the values in the cuelist would be:

Channel:	1	2	3	4
Cue 1	100	0	50	50
Cue 2	50		100	
Cue 3		100		

To unblock cues, use the Unblock button in the Main Toolbar:

- Cue **3** Unblock, Enter : unblock cue 3 on the currently chosen master.
- List **1** Cue **3** Unblock, Enter : unblock cue 3 of cuelist 1.
- Cue **1** Thru **10** Colour Unblock, Enter : unblock only colour parameters in cues 1 through 10 of the cuelist on the currently chosen master.
- List **1** Cue **3** Group **10** Colour Unblock, Enter : unblock only the colour parameters of fixtures in Group 3, in cue 3 of cuelist 1.

To unblock complete cuelists:

- List **1** Unblock, Enter

Or on a master:

- Unblock Choose

Tip

Unblocking obeys the linked parameter preferences assigned in Setup → Preferences → Programming. For example, if position parameters are not separated and Pan is blocking but Tilt is not, Pan will not be unblocked. For more on linked functions, see *Separating Parameters (p.179)*

Important

Unblocking will remove parameter values from blocking cues, so any future changes to subsequent cues will be tracked through the whole cuelist.

19.8 Mark Cues (Move in Black)

A Mark cue is a special designator for a cue that looks at the previous cue and any fixtures with an intensity of zero after completion of the cue. If a fixture meets these requirements, the mark cue allows the fixture(s) to 'preset' for the next cue by executing the crossfade for all parameters except intensity. This allows the fixture(s) to 'move in black' as they change to their new parameter values. When the next cue is later executed, only the intensity parameter changes as all other parameters will already be at their new values due to the mark.

		Fade	Intensity	Position	Colour
Cue 1		2s	100%	Centre	Red
Cue 2		2s	0%	Centre	Red
Cue 3	Mark	5s	100%	Left	Green

In the example above, when cue 2 completes its 2 second fade to 0% intensity, cue 3 will automatically play all of its data except intensity in a 5 second fade. Then when cue 3 is played only the intensity will crossfade at 5 seconds. The fixtures will have moved from centre to left and changed from red to green automatically while in 'black'.

When a mark cue plays, it will use the fade and delay times assigned in the cue that contains the marking data. Marking occurs on a fixture by fixture basis, so several fixtures could be marking at different times and rates depending upon their individual cue data.

There are several methods to assign a cue to mark:

- Select the Mark cell of a cue and press Set to toggle it between a marking cue and a non-marking cue.
- Enable the Mark New Cues option in the Cuelist Options window. All new cues will be created with the mark column enabled.
- Toggle the Mark button in a Cue Editor window.

Marking only functions within a cuelist and is not possible when changing from one list to the other since each cuelist is not aware of the intensity values of the other.

Tip

Marking occurs with the intensity parameter for standard fixtures as well as I Red, I Green, and I Blue parameters for RGB fixtures such as LEDs.

If the first cue in a list is assigned to mark, it will only mark after the last cue in the list is played. By recording a blank cue prior to the first cue in the list, you can create a mark cue for the first look of a show. For example:

		Fade	Intensity	Position	Colour
Cue 0.5		-	-	-	-
Cue 1	Mark	0,2s	100%	Right	Blue
Cue 2		2s	50%	Left	-

When cue 0.5 plays it will mark cue 1 so that cue 1 will fade up intensities on stage after the fixtures are already in position and color. Furthermore, since the intensity time of cue 1 is assigned to 2 seconds and the other parameters are assigned to zero, the mark cue will occur as quickly as possible.

When a cue is in the marked state, the mark cell in the Cuelist window will remain highlighted and in an orange color; see *Figure 19.2, "A Cuelist with a Marked Cue"*.

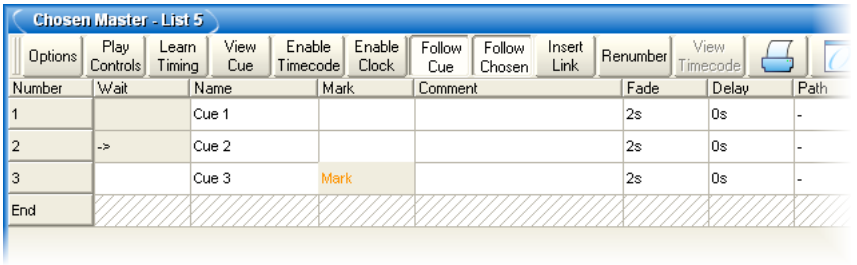


Figure 19.2. A Cuelist with a Marked Cue

Section 20: Working with Cue Timing and Ordering

You can control three aspects of cue timing and ordering:

- The speed and manner in which the transition of parameter values happens when the cue is played back. See *Working with Fade Timings (p.226)*.
- How the cue is triggered. See *Working with Cue Triggers (p.236)*.
- The order in which cues in the cuelist are played back. See *Working with Loops and Links (p.240)*.

The different types of timing values are:

- **Fade time:** The time that it takes fixture parameters to change from their initial value to their value in the cue that is being played back. You can assign a single fade time for the cue, or have separate fade-in and fade-out times. The fade-in time is the fade time for parameters belonging to fixtures that are increasing in intensity, while the fade-out time is the fade time for parameters belonging to fixtures that are decreasing in intensity.
- **Delay time:** The time between the cue being triggered and parameter values starting to change. As with fade times, you can assign a single delay time, or have separate in delay and out delay times. The in delay time is the delay between the cue being triggered and parameters belonging to fixtures that are increasing in intensity starting to change, while the out delay time is the delay between the cue being triggered and parameters belonging to fixtures that are decreasing in intensity starting to change.
- **Path:** How parameter values change during the fade. The simplest path is a straight line, so that parameter values change smoothly and evenly throughout the fade, but you can use paths that make all of the change happen at the start of the fade, for example.

The different types of trigger values are:

- **Wait time:** The time from the previous cue being triggered to the current cue being triggered.
- **Follow-on time:** The time from the end of the previous cue to the current cue being triggered.
- **Timecode:** A specific timecode value when a cue is triggered; see *Triggering Cues from Timecode (p.325)*.
- **Clock:** A real-world time and date value when a cue is triggered; see *Clock Triggers (p.238)*.

Figure 20.1, "Cue timings" shows how the main kinds of timing and triggering values control the playback of cues.

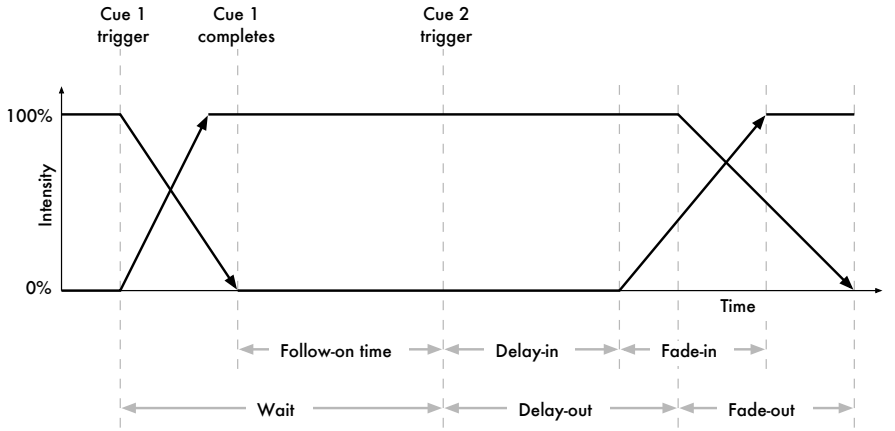


Figure 20.1. Cue timings

Wholehog OS allows you to assign timings to each parameter of each fixture in a cue, scene or palette. Often, you will want to assign the same value to every fixture parameter; this is described in *Working with Fade Timings (p.226)*. Assigning timings for individual parameters is described in *Individual Parameter Timings (p.231)*.

20.1 Working with Fade Timings

You can assign **fade** and **delay** times, and **paths**, to cues. You can assign separate fade, delay and path values for the cue.

Cues recorded without assigning any time information will be given the default time; this can be adjusted in the Default Timing pane of the User Preferences window.

20.1.1 Fade Time

To record a cue with a fade time other than the default:

1. Create the desired look for the cue in the Programmer.
2. Fixture Enter : select all the fixtures currently in the Programmer.
3. Time **7** Enter : assign a fade time of 7 seconds.
4. Record Cue **1** Enter : record the cue on the currently chosen master.

To assign times greater than 1 minute, enter the number of minutes followed by the number of seconds:

- Time **140** Enter : select a fade time of 1 minute 40 seconds.

To change the time of an already recorded cue:

1. Cuelist **1** : select the cuelist unless the desired cuelist or master is already the chosen master.
2. Cue **2** Time **7** Enter : assigns a fade time of 7 seconds.

Different Fade-in and Fade-out Times

You can assign different fade-in and fade-out times (known as a 'split time') using the / key. For example:

1. Create the desired look for the cue in the Programmer.
2. Fixture Enter : select all the fixtures currently in the Programmer.
3. Time **7** / **10** Enter : select a fade-in time of 7 seconds, and a fade-out time of 10 seconds.
4. Record : record the cue on the currently selected master.

Important

Wholehog OS's definition of fade-in and fade-out times is different to that used by some other consoles. Some consoles use fade-in and fade-out times for intensity parameters only and have a separate time for all other parameters; Wholehog OS has fade-in and fade-out times for each individual parameter. Also, with some consoles the fade-out time applies when the cue goes out, so that cue 2's fade-out time takes effect during the change from cue 2 to cue 3 rather than (as with Wholehog OS) cue 1 to cue 2.

Fade Time with Masks

You can record fade times with a mask. For example:

- Cue **1** Fixture **1 + 2** Colour Time **4** Enter : sets the fade time for the colour parameter values of Fixtures 1 and 2 in Cue 1.

Tip

If you want to assign individual times for several fixtures or fixture parameters, you can edit them in the Cue Editor window by clicking on its Fade button; see *Individual Parameter Timings (p.231)*.

20.1.2 Delay Time

You can create a delay between the cue being triggered and the fade times beginning to execute by assigning the Delay time:

1. List **1** Open : open the cuelist.
2. Select the cue's Delay cell and press Set.
3. **5**, Enter : enter the delay time. As with fade times you can assign separate delay times for the incoming and outgoing parts of the cue, for example **3/5**.

Alternatively, you can use the command line, pressing the Time key twice to assign the delay time:

- Cue **2** Time Time **5** Enter

Tip

Note that the Delay time should not be confused with the Wait time; see *Working with Cue Triggers (p.236)*.

20.1.3 Paths

Paths determine the way parameter values change during a cue. For example, with the simplest (linear) path, an intensity parameter travels from its start value to its end value at a steady rate for the duration of the cue. The paths available are shown in *Figure 20.2, "Path Types"*.

To select a path for a cue:

1. List **1** Open : open the Cuelist window.
2. Select the cue's Path cell and press Set. The Crossfade Paths window will open.
3. Select the path type required for the incoming and outgoing parts of the cue.
4. Press OK

Tip

The shape of the paths described above applies when the cue is asserted. When it is released, the path is effectively reversed. For example, attributes with a 'Start' path will snap on the Go of a cue, but will snap at the very end of that cue being released (behaving like an 'End' path).

20.1.4 Assigning Cue Timings in the Cuelist Window

You can edit fade or delay times in the Cuelist window. Assigning fade or delay times here will assign the new value to all the parameters of all the fixtures in the cue.

Path	Description
Default	Uses the default path from the fixture's library definition. This is generally Linear for continuous parameters and Start for slotted parameters.
Linear	Fades at a steady rate for the duration of the cue.
Start	Snap change at the beginning of the cue.
End	Snap change at the end of the cue.
Over	The parameters overshoot their destination and then return to it.
Under	The parameters move first in the opposite direction before going to their destination.
Damped	The parameters change more slowly at the start and end of the cue than in the middle.
Brake	The parameters change more slowly at the end of the cue.
Speed Up	The parameters change more slowly at the start of the cue.
Shake	The parameters follow a chaotic, sawtooth fade over the course of the cue.

Figure 20.2. Path Types

1. Open + Choose : open the cuelist of the desired master.
2. Click in the cell for the fade or delay time of the desired cue, and press Set.
3. Type in a time value, and press Enter.

When entering a time value, it should be in the form:

[hours] h [minutes] m [seconds] s / [hours] h [minutes] m [seconds] s

For example:

- **2s** : 2 seconds in and out times.
- **2s/5s** : 2 seconds in, 5 seconds out.
- **1m** : 1 minute in and out times.
- **1m10s** : 1 minute and 10 seconds in and out times.
- **1h10m30s/1h** : 1 hour, 10 minutes and 30 seconds in time, and 1 hour out time.

Use the H, M and S buttons that appear when editing a fade or delay time cell to enter the H, M and S text into the cell. Alternatively, you can use an external keyboard.

Note that if you enter **140** the time will be 1 minute 40 seconds, not 140 seconds (2 minutes 20 seconds).

To assign paths directly in the Cuelist window:

1. Click in the Path cell for the desired cue, and press Set.
2. Choose a path from the displayed list; see *Figure 20.3, "Selecting a Path in a Cuelist Window"*.

   The In path is applied when a fixture is increasing in intensity during the crossfade, and the Out path when a fixture is decreasing in intensity.
3. Press OK.

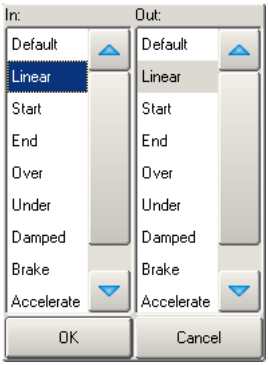


Figure 20.3. Selecting a Path in a Cuelist Window

The different types of path are explained in *Paths (p.228)*.

20.2 Individual Parameter Timings

When you record a cue, all of the fixture parameters in the cue are assigned the default fade, delay and path values. Similarly, when you assign timings to a cue after recording, the timing value is applied to all fixture parameters in the cue. However, you can assign fade, delay or path values to individual parameters in the Programmer, and these settings are then included when you record cues and scenes, and (optionally) palettes. You can also assign timings to parameters in the cue, scene and palette editors. Note that you can only assign timings for a parameter that has a value in the editor.

To display parameter fade times, delay times or paths in an editor, select the Fade, Delay or Path buttons from the top left of the editor window.

You can assign the individual timings of parameters using the parameter wheels, the command line or directly in editor windows. You can also assign timings to all parameters of a fixture using the parameter wheels or the command line.

Important

If you assign individual timings for parameters and subsequently assign an overall cue time, then the individual parameter timings will be replaced by the overall cue time.

20.2.1 Assigning Parameter Timings with the Parameter Wheels

To assign fade and delay timings to all the parameters of a fixture:

1. Select the fixtures that you want to assign timings to, making sure that they have been given parameter values.
2. Press the Time key.
3. The Wheels Toolbar will show the available timing types (Fade In, Fade Out, Delay In and Delay Out) together with their current settings; see *Figure 20.4, "The Wheels Toolbar showing Timing"*.
4. Use the parameter wheels to assign the desired Fade In, Fade Out, Delay In and Delay Out.

Note that if you want to see the timings that you have assigned in the editor, you can select the Fade or Delay views using the buttons in the top left of the editor window. You don't have to be in these views to assign timings, however.

Figure 20.4. The Wheels Toolbar showing Timing

To assign fade and delay timings to specific parameter types:

1. Select the fixtures that you want to assign timings to, making sure that they have been given parameter values.
2. Press the Time key.
3. The Wheels Toolbar will show the available timing types.
4. Click on Fade In, Fade Out, Delay In or Delay Out and select a parameter type; see *Figure 20.5, "Selecting Parameter Types from the Wheels Toolbar"*.
5. Use the parameter wheels to assign the desired timing.

Figure 20.5. Selecting Parameter Types from the Wheels Toolbar

To assign a path to all the parameters of a fixture:

1. Select the fixtures that you want to assign a path to, making sure that they have been given parameter values.
2. Press the Time key.
3. The Slot Toolbar will show buttons for All, In and Out; see *Figure 20.6, "The Slot Toolbar showing Paths"*.
4. Choose In to assign a path to be applied to the parameters when the fixture they belong to is increasing in intensity during the crossfade. Choose Out to assign a path to be applied to parameters when the fixture they belong to is decreasing in intensity during the crossfade. Choose All to assign a path to be applied to parameters of fixtures irrespective of whether their intensity is increasing or decreasing.

   The Paths Toolbar will open; see *Figure 20.7, "The Paths Toolbar"*.
5. Select the desired path from the Paths Toolbar. The different types of path are explained in *Paths (p.228)*.

Figure 20.6. The Slot Toolbar showing Paths

Figure 20.7. The Paths Toolbar

20.2.2 Assigning Parameter Timings with the Command Line

To assign the fade time for all parameters of a fixture:

1. Fixture **1** : select the fixtures you want to assign a time to, making sure that they have been given parameter values.
2. Time **4**, Enter : assigns the **fade time** to 4 seconds.

To assign separate fade in and fade out times:

1. Fixture **1** : select the fixtures you want to assign a time to, making sure that they have been given parameter values.
2. Time **4** / **7**, Enter : assigns the Fade In time to 4 seconds and the Fade Out time to 7 seconds.

To assign a fade time for a particular parameter type:

1. Fixture **1** : select the desired fixtures.
2. Colour Time **4**, Enter : assigns the fade time of the colour parameters to 4 seconds.

To assign a delay time, press the Time key twice:

1. Fixture **1** : select the desired fixtures.
2. Time Time **2**, Enter : pressing Time twice assigns the **delay time**.

To assign a path, press the Time key three times:

1. Fixture **1** : select the desired fixtures.
2. Time Time Time **2**, Enter : enter a number to represent the path.

Select the path by entering a number; the mapping is the same as the order they appear on the path toolbar, starting at zero for the default path.

20.2.3 Assigning Parameter Timings in an Editor Window

To assign fade or delay times directly in the spreadsheet of an editor:

1. View the required timing type by pressing either the Fade or Delay button in the top left of the editor window.
2. Click in the cell for the desired parameter, or click and drag to select a range of cells.
3. Press Set.
4. Type in a time value, and press Enter.

When entering a time value, it should be in the form:

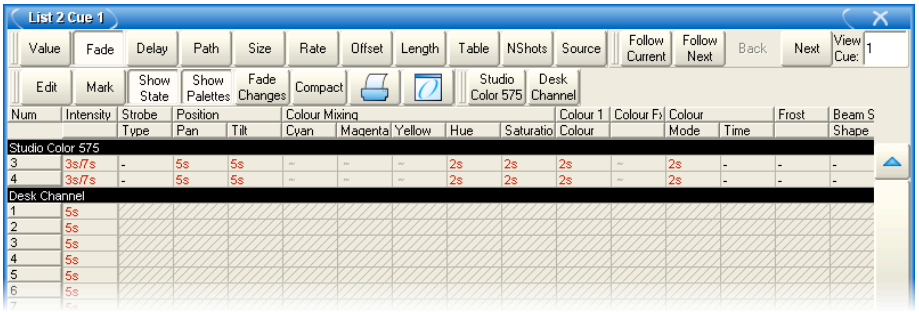


Figure 20.8. The Cue Editor window with Fade selected

- **`[hours] h [minutes] m [seconds] s / [hours] h [minutes] m [seconds] s`**

For example:

- **`2s`** : 2 seconds in and out times.
- **`2s/5s`** : 2 seconds in, 5 seconds out.
- **`1m`** : 1 minute in and out times.
- **`1m10s`** : 1 minute and 10 seconds in and out times.
- **`1h10m30s/1h`** : 1 hour, 10 minutes and 30 seconds in time, and 1 hour out time.

Use the H, M and S buttons that appear when editing a fade or delay time cell to enter the H, M and S text into the cell. Alternatively, you can use an external keyboard.

Tip

If you enter **`120`**, this will be interpreted as 1 minute 20 seconds. To have the console interpret it as 120 seconds (i.e. 2 minutes), enter **`120s`**.

To assign paths directly in the spreadsheet of an editor:

1. Press the Path button in the top left of the editor window.
2. Click in the cell for the desired parameter, or click and drag to select a range of cells.
3. Press Set.
4. Choose a path from the displayed list; see *Figure 20.9, "Selecting a Path in an Editor"*.

   The In path is applied when the fixture is increasing in intensity during the crossfade, and the Out path when the fixture is decreasing in intensity.

5. Press OK.

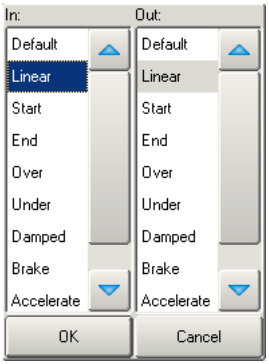


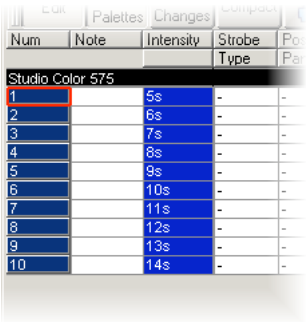
Figure 20.9. Selecting a Path in an Editor

The different types of path are explained in *Paths (p.228)*.

20.2.4 Fanned Timings

You can fan timings across multiple fixtures, just as you can fan colour or position. For example, to fan times across 10 fixtures:

- Fixture **1** Thru **10** Time **5** Thru **14** Enter : fans the fade times of Fixtures 1 through 10 between 5 and 14 seconds:



Similarly, you can fan delay times:

- Fixture **1** Thru **5** Time Time **5** Thru **10** Enter : fans the delay times of Fixtures 1 through 5 between 5 and 10 seconds.

For more on fanning, including fanning using the parameter wheels and in spreadsheet views, see *Fanning (p.173)*.

20.3 Working with Cue Triggers

Wholehog OS provides several ways to trigger cues in addition to manual operation from the Go key. To assign a cue's trigger:

1. List **1** Open : open the cuelist.
2. Select the Wait cell for the desired cue, and press Set.
3. The Trigger Toolbar will appear below the Wait cell; see *Figure 20.10, "The Trigger Toolbar"*. Select an option from this.

Figure 20.10. The Trigger Toolbar

The trigger options are:

- **Halt:** When the cuelist reaches a Halt, it stops executing cues and waits for the Go key to be pressed. A Halt is shown by an empty Wait cell, and it is the default cue trigger.
- **Wait:** The Wait time is the time between the triggering of the previous cue (either automatically or by pressing Go) and the next cue to be triggered. It should not be confused with the Delay, which is the time between the cue being triggered (after a Wait if there is one) and the fade starting. The Wait time schedules cues within the cuelist, whereas the Delay time schedules the fades of each parameter within the cue. A cue can contain multiple Delay times, but it can only have one Wait time. See *Figure 20.1, "Cue timings"*.

  A wait is displayed as the time value in the Wait cell.
- **Follow:** A follow will trigger the next cue once the previous cue has completed all its fade and delay times. You can enter a time after pressing the Follow button, which determines the time between the previous cue completing and the follow cue being triggered. See *Figure 20.1, "Cue timings"*.

  The follow is displayed in the Cuelist window as 'Follow + [time]'.

  The follow time should not be confused with the wait time. The follow time controls the time between the end of one cue and the triggering of the next, while the wait time controls the time between the triggering of one cue and the triggering of the next.
- **Timecode:** The cue is triggered when this timecode value is received. See *Working with Audio, MIDI and Timecode (p.317)*. The timecode value will be displayed in the wait cell.

- **Manual:** A manual cue can only be triggered by pressing the Go key. This stops the cuelist until the Go key is pressed, irrespective of any wait, follow or timecode triggers that later cues in the list may have.

  Manual cues are useful because the word 'Manual' appears in the Cuelist window to remind the operator that they need to press the Go key. They are also useful to prevent times being recorded into the Wait column when using *Learn Timing (p.237)*.

- **Clock:** The cue is triggered when this real-world time and date is reached on the Wholehog OS built in clock; see *Clock Triggers (p.238)*.

20.3.1 Learn Timing

You can use Learn Timing to assign cue trigger timing values by operating the cues with the Go key manually once. The console can either assign wait times to replicate your timing, or assign the cue trigger to a frame value of a running timecode.

To use Learn Timing with timecode:

1. Open, Choose : open the Cuelist window of the required cuelist.
2. Options → Cuelist Options : open the Cuelist pane of the cuelist's Options window.
3. Select Enable Timecode, and choose a timecode source. Close the Options window.
4. In the Cuelist window, click View Timecode. The Timecode Toolbar will open.
5. If your timecode source is not currently running, click Simulate on the Timecode Toolbar to have the console create a timecode source. Controls for the timecode will appear.
6. In the Cuelist window, select Learn Timing.
7. Start the timecode, and press the Go key when the timecode reaches the time that you want each cue to go. A timecode frame value will appear in the Wait cell for each cue.
8. When you have finished, deselect Learn Timing.

Now when you run the timecode, the cues will be triggered when the timecode reaches each cue's assigned frame. For more information on timecode, see *Working with Audio, MIDI and Timecode (p.317)*.

To use Learn Timing without timecode:

1. Open, Choose : open the Cuelist window of the required cuelist.
2. Ensure that Enable Timecode is not selected.
3. Select Learn Timing.

4. Press the Go key to run the first cue, and again to run subsequent cues after the required time interval. A time value equivalent to the duration between Go presses will appear in the Wait cell for each cue.
5. When you have finished, deselect Learn Timing.

Now when you run the first cue, the subsequent cues will be triggered at the same intervals as when you ran them manually.

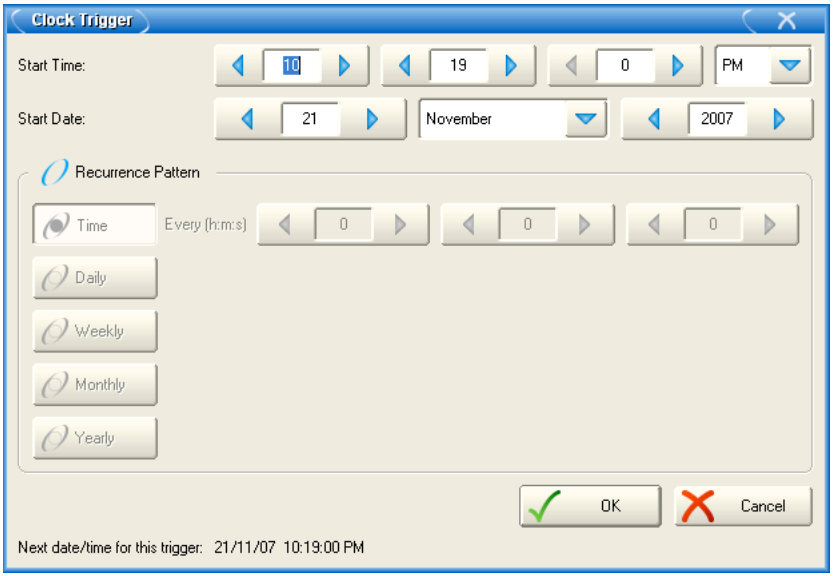
Tip

Learn Timing will only set a trigger on a cue that is currently set to Halt - that is, it has an empty Wait cell. To remove existing wait times from cues, select the wait cell(s) and press Set. Select Halt from the toolbar.

20.3.2 Clock Triggers

To assign a cue to be triggered at a particular time and date using Wholehog OS's internal clock:

1. List **1** Open : open the cuelist.
2. Select the Wait cell for the desired cue, and press Set.
3. The Trigger Toolbar will appear below the Wait cell; see *Figure 20.10, "The Trigger Toolbar"*.
4. Select Clock; the Clock Trigger window will open:



5. Adjust the Start Time and Start Date to assign a single shot trigger.

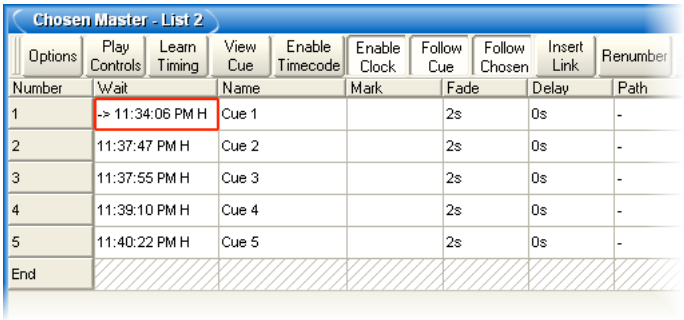
6. If you want the trigger to recur at regular intervals, check the Recurrence Pattern check box. Then click the frequency (Time, Daily, Weekly, Monthly, Yearly) with which you want the trigger to recur, and select options for the specified frequency.

Tip

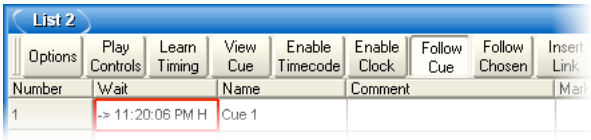
The next valid trigger date and time is shown at the bottom of the Clock Trigger window.

7. Click OK.

Once you have set a clock trigger, the cuelist window will now indicate the trigger time and type in the cue's Wait column:



To enable or disable the clock functions on a cuelist, toggle the Enable Clock button in the cuelist window:



Tip

You can also enable or disable the clock functions for a cuelist in the cuelist's Cuelist Options window, or using macros; see *Automating the Console Using Macros (p.329)*.

The Clock Toolbar

The Clock Toolbar shows the time and date according to the Wholehog OS clock, and information about the next cue due to be triggered. To open the Clock Toolbar:

- Open + Clock : the Clock Toolbar will open on the left touchscreen:

The Clock Toolbar will automatically update its fields according to the next valid trigger.

Tip

You can assign the format of the date and time in the Appearance pane of the Preferences window. The Clock Toolbar, Cuelist triggers and the Command Line Toolbar clock will display in the selected format.

20.4 Working with Loops and Links

Normally cues in a cuelist will be replayed in numerical order, but you can use links to change this. Links can be used to jump to other points in the cuelist, or to create loops.

Unlike some consoles, Wholehog OS creates a link as a special type of cue, rather than an attribute of an ordinary cue. Because it is a separate item in the cuelist, you can move cues within the list without disturbing the link.

Tip

When a cuelist gets to the end, it will link back to the first cue by default, so there is no need to put a link in.

20.4.1 Creating a Link

To create a link:

1. Open + (Cuelist 1) : open the cuelist window.
2. Play the cues in the list until the current cue (shown by -> in the wait column) is the cue before where you want the link.
3. Click on the Insert Link button in the window. The link cue will be inserted after the current cue.
4. Select the Fade cell of the link.
5. Set **`[cue number]`** Enter : assign the cue number to be linked to.

You can delete link cues in the same way as any other type of cue. For example:

- Cue **`3.5`** Delete

20.4.2 Creating a Loop

To create a loop, you need to have two things:

- A link that points to a cue earlier in the cuelist.
- All the cues in the loop (between the linked-to cue and the link cue) must be assigned with wait or follow triggers; see *Working with Cue Triggers (p.236)*.

Wholehog OS will recognise this as a loop; see *Figure 20.11, "A Cuelist with a Loop"*.

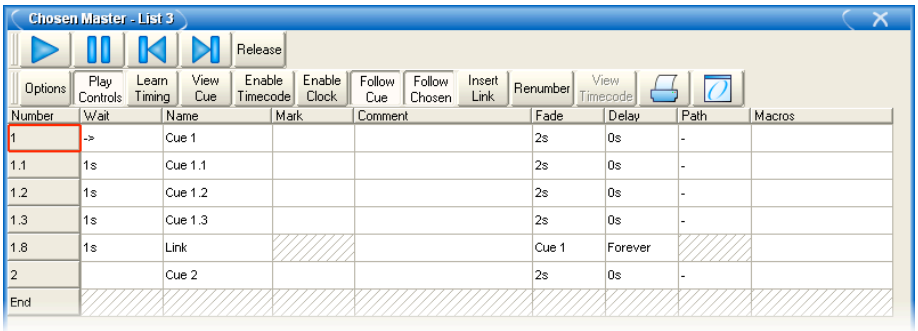


Figure 20.11. A Cuelist with a Loop

Exiting Loops

You can determine when the cuelist stops looping and continues with cues after the loop. The options are:

- **Forever:** the loop will run indefinitely until you press the Go key.
- **Count:** the cuelist will loop the assigned number of times. Assigning a count of zero will make the cuelist ignore the link.
- **Timed:** the cuelist will loop until the assigned time period has elapsed.

To assign the looping behaviour:

1. Open + (Cuelist 1) : open the cuelist window.
2. Select the link cue's Delay cell, and press Set.
3. Select an option from the Loops Toolbar:

4. If you have selected Count or Timed, enter a count or timed value.

You can also configure what happens when you press the Go key during a loop; see *Action of go when Looping (p.271)*.

20.4.3 Tracking Through Loops

By default, Wholehog OS's *Maintain State (p.10)* feature ensures that, when you use links to change the order of cue playback, the cues appear on stage as if they had been played back in the order they appear in the cuelist.

Sometimes, however, you might want to track through links rather than maintain state. For example, you are creating a loop where the first time through you want the four fixtures to come on one at a time, and throughout the loop you want them to alternate colour between red and blue. To do this, you might plot:

Cue	Fixture 1		Fixture 2		Fixture 3		Fixture 4	
	Int.	Colour	Int.	Colour	Int.	Colour	Int.	Colour
1	50%	Red		Blue		Red		Blue
2	↓	Blue	50%	Red		Blue		Red
3	↓	Red	↓	Blue	50%	Red		Blue
4	↓	Blue	↓	Red	↓	Blue	50%	Red
5	Link to Cue 1							

The idea is that the intensity of the next fixture is brought to 50% in each cue, and that these values then track through for the duration of the loop (shown by the arrows). However, because of the Maintain State function, when the cuelist loops back to cue 1 Wholehog OS will make cue 1 look as it would have if you had run the cuelist in order. The result is that fixtures 2 to 4 will go out, just as they were the first time round the loop.

To stop this happening, you need to enable Track Through Loops, in the Cuelist Options window:

1. Open List **1** : open the cuelist window.
2. Press Options and select the Track Through Loops tickbox.

Note that Track Through Loops also applies when the cuelist automatically loops back to the start of the list after you play back the last cue in the list.

Important

The Track Through Loops option applies to the whole cuelist. Using it may have unintended consequences when playing back other cues in the cuelist out of sequence.

Section 21: Working with Cuelists

Cuelists are lists of cues, usually used to play back the cues in a defined order. A cue number is specific to each cuelist, not the entire console, so there can be a cue 1 for cuelists 1, 2 and 3. Cuelists are held in the Cuelist Directory (*Figure 21.1, "The Cuelist Directory window"*), and it is possible to copy or move cues between cuelists; see *Copying and Moving Cues (p.214)*.

To open the Cuelist Directory:

- Open + List

Alternatively:

- List, List

For general information on working with directories, see *Working with Directories (p.108)*.

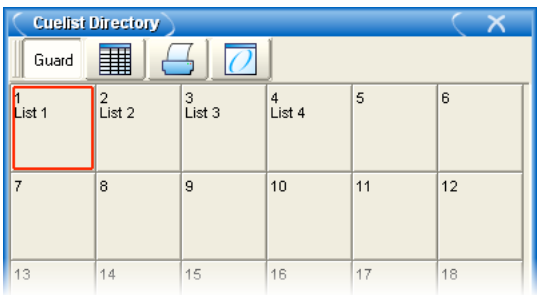


Figure 21.1. The Cuelist Directory window

To open a cuelist (*Figure 21.2, "The Cuelist window"*):

- Open + [Cuelist 1] : select a cuelist from the Cuelist Directory.

Or with the command line:

- List **1** Open

Or:

- Open + Choose : select the master with the cuelist.

Tip

Cuelist windows can be set to always show the same cuelist or to follow the currently chosen master: see *Cuelist Feedback (p.281)*.

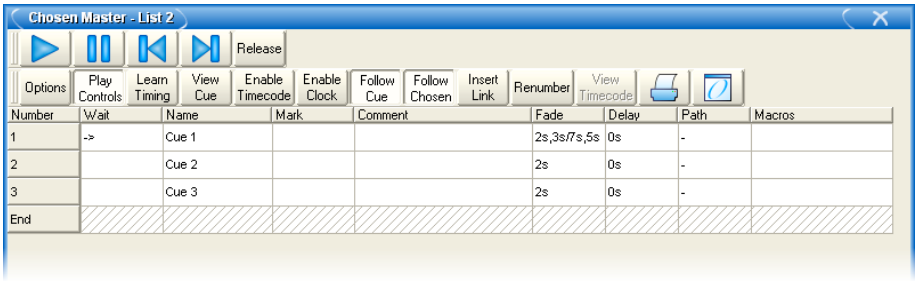


Figure 21.2. The Cuelist window

21.1 Creating Cuelists

Cuelists are created automatically when you record a cue to an empty location in the Cuelist Directory, or to a master that has no cuelist attached to it. See *Recording a Cue (p.211)*.

21.2 Naming Cuelists

You can name cuelists:

1. Open + List : open the Cuelist Directory.
2. Check that the Guard button is selected, so that you don't accidentally activate a cuelist when pressing its button in the directory.
3. Select the cuelist.
4. Set **[name]** Enter : type in the name.

Tip

You can rename a cuelist when it is attached to a master by pressing Set + Choose.

21.3 Deleting Cuelists

To delete a cuelist:

1. List **1** Delete : deletes cuelist 1.
2. Click OK to confirm the delete.

Or from the cuelist directory:

1. Open + List : open cuelist directory.
2. Check that the Guard button is selected, so that you don't accidentally activate a cuelist when pressing its button in the directory.
3. Delete, (Cuelist 1) : delete the cuelist. You will be asked to confirm the action.

Tip

If you prefer not to be asked to confirm the delete action, select Don't Ask Me Again in the confirmation window. You can reenable the confirmation by going to Setup → Preferences → Programming and selecting Confirm before deleting directory items.

Tip

To detach a cuelist from its master rather than deleting it completely from the show file, hold Delete while pressing the master's Choose button. This removes the cuelist from the master but not from the cuelist directory.

21.4 Copying and Moving Cuelists

Cuelists can be copied and moved within the Cuelist Directory. To open the Cuelist Directory:

- Open + List

21.4.1 Copying Cuelists

To make a copy of a cuelist:

- List **1** Copy List **2** Enter : copies Cuelist 1 to Cuelist 2.

If the destination cuelist already exists, you will be asked to choose an option: *Insert, Merge and Replace (p.246)*.

21.4.2 Moving Cuelists

To move a cuelist to a new location within the Cuelist Directory:

- List **1** Move List **2** Enter : moves Cuelist 1 to Cuelist 2.

If the destination cuelist already exists, you will be asked to choose an option: *Insert, Merge and Replace (p.246)*.

21.4.3 Insert, Merge and Replace

When copying or moving a cuelist, if the destination location already has a cuelist in it, you will be prompted with record options of Insert, Merge or Replace:

- **Insert:** creates a new destination cuelist. The new cuelist will be assigned a free location just before the one chosen, using a point number if necessary.
- **Merge:** Incorporates the source information into the destination cuelist. If the cue numbers are in both cuelists, the new parameter values of the cues will replace the old.
- **Replace:** Overwrites the cuelist information in that destination.

If you are copying a cuelist, all three options are available. If you are moving a cuelist, only the Insert option is available.

Tip

If you know that you are about to copy or move a cuelist to an existing destination, you can pre-select Insert, Merge or Replace from the Record Options Toolbar. This appears after you press the Record, Copy or Move keys.

Section 22: Working with Scenes

A scene is a single cue with full timing features that does not belong to a cuelist. Scenes can be used to store a single look that may be called back for use in later programming, or to play back many simple looks directly from physical or virtual masters.

Scenes are stored in the Scene Directory: see *Figure 22.1, "The Scene Directory window"*. For general information on working with directories, see *Working with Directories (p.108)*. To open the Scene Directory:

- Open + Scene : opens the Scene Directory.

See also *Scene Playback (p.291)*.

Figure 22.1. The Scene Directory window

22.1 Recording a Scene

You can record scenes either directly to a physical master for immediate playback, or to the Scene Directory.

22.1.1 Recording to the Scene Directory

To record a scene:

1. Create the look for the scene in the Programmer or editor.
2. Record, Scene : the Scene Directory window opens.
3. Select the destination location in the Scene Directory window.
4. Alternatively, enter a number on the keypad and press Enter.

22.1.2 Recording to a Physical Master

You can record a scene directly to a physical master. Wholehog OS will automatically put it in the next available location in the Scene Directory:

1. Create the look for the scene in the Programmer or editor.
2. Record, Scene
3. Press the Choose key above the desired physical master.

22.1.3 Naming a Scene

You can give a scene a name that will be displayed in the Scene Directory window:

1. Open + Scene : open the Scene Directory.
2. Check that the Guard button is selected, so that you don't accidentally activate a scene when pressing its button in the directory.
3. Select the scene.
4. Set **[name]** Enter : type in the name.

Tip

To name a scene immediately after recording it, pressing the Set key will open a Quickname window. Enter the scene name and select OK.

22.2 Deleting Scenes

To delete a scene:

1. Scene **1** Delete
2. Click OK to confirm the delete.

Tip

If you prefer not to be asked to confirm the delete action, select Don't Ask Me Again in the confirmation window. You can reenable the confirmation by going to Setup → Preferences → Programming and selecting Confirm before deleting directory items.

You can delete a range of scenes:

1. Scene **1** Thru **4** Delete : deletes scenes 1 to 4.
2. Click OK to confirm the delete.

Tip

To detach a scene from its master rather than deleting it completely, hold Delete while pressing the master's Choose button. This removes the scene from the master but not from the scene directory.

22.3 Copying and Moving Scenes

To make a copy of a scene:

- Scene **1** Copy Scene **2** Enter : copies the contents of Scene 1 to Scene 2.

Similarly, to move a scene to a new location:

- Scene **1** Move Scene **2** Enter : moves Scene 1 to Scene 2, effectively deleting 1.

If the destination scene already exists, you will be asked to choose an option: *Insert, Merge and Replace (p.250)*.

22.4 Editing Scene Contents

You can edit the contents of a scene in an editor window. For example, to open Scene 1 for editing:

1. Open + Scene : opens the Scene Directory.
2. Open + (Scene 1) : opens the scene editor for Scene 1.
3. Alternatively using the command line : Scene **1** Open
4. Press the Edit button in the editor window to select this as your current editor.

Within the editor, you can assign fixture parameters and timing in the same way as in the Programmer; see *Selecting Fixtures, Modifying Parameters (p.155)*. For general information on working with editors, see *Working with Editors (p.112)*.

22.5 Scene Timing

Scene timing controls the fade-in and delay of a scene when it is run on a master; see *Scene Playback (p.291)*.

You assign and edit scene timings in the same way as for cues; see *Working with Fade Timings (p.226)*. You can assign scene timing in the Programmer before recording the scene, or later in the scene editor. You can also assign the fade time of a scene from the command line. For example, to give Scene 1 a fade time of 6 seconds:

- Scene **1** Time **6** Enter

You can also record fade times with a mask. For example:

- Scene **1** Fixture **1** **+** **2** Colour Time **4** Enter : sets the fade time for the colour parameter values of fixtures 1 and 2 in Scene 1.

22.6 Insert, Merge and Replace

When recording, copying or moving a scene, if the destination location already has a scene recorded in it, you will be prompted with record options of Insert, Merge or Replace:

- **Insert:** creates a new destination scene. The new scene will be assigned a free location just before the one chosen, using a point number if necessary.
- **Merge:** Incorporates the new information into the destination scene. If the same fixture parameters are in both scenes, the new values will replace the old.
- **Replace:** Overwrites the scene information in that destination.

If you are copying a scene, all three options are available. If you are moving a scene, only the Insert option is available.

Tip

If you know that you are about to record, copy or move a scene to an existing destination, you can pre-select Insert, Merge or Replace from the Record Options Toolbar. This appears after you press the Record, Copy or Move keys.

Section 23: Working with Effects

You can use effects to create a repeating change or 'movement' in the value of fixture parameters. Effects are recorded as part of cues, scenes and palettes.

Effects are applied to parameters using effect tables that apply mathematical functions (such as sine or tangent) to values against time. Each parameter that has an effect applied to it has five effects attributes: table, size, rate, offset, and length; see *Types of Effect (p.251)*. In addition the effect table has its own timing parameters for fade, delay, and path.

There are three ways of applying effects:

- **Predefined Effect Palettes:** A range of pre-programmed effects can be found in the Effect Directory that can be edited or applied quickly.
- **The Effects Engine:** You can assign and edit the effects values for your current fixture selection in the Effects Engine. The Effects Engine is often more convenient for assigning and editing effects, as it allows you to see all the effects attributes without having to switch the editor's display to display the different effects attributes.
- **Applying Effects in Editors:** You can assign and edit effects values for specific fixture parameters in editors such as the Programmer, just as you do with other parameter values.

23.1 Types of Effect

23.1.1 Effect Tables

You can select the effect type by choosing an effect table that applies a mathematical function (such as sine or tangent) to the parameter values. The available tables, and how the parameter value varies over time,are shown in *Figure 23.1, "Effect Tables"*.

Note that the effects table varies the value of the parameter either side of its base level, represented by the dotted line in the diagrams. The three types of random table are weighted differently, biasing the random parameter values towards the low, high or middle part of the possible range.

Using Effect Tables

Listed below are examples of combinations of effects tables in use:

- **Circular Motion:** A Sine table is applied to pan and tilt, with tilt given an Offset of 90 degrees.

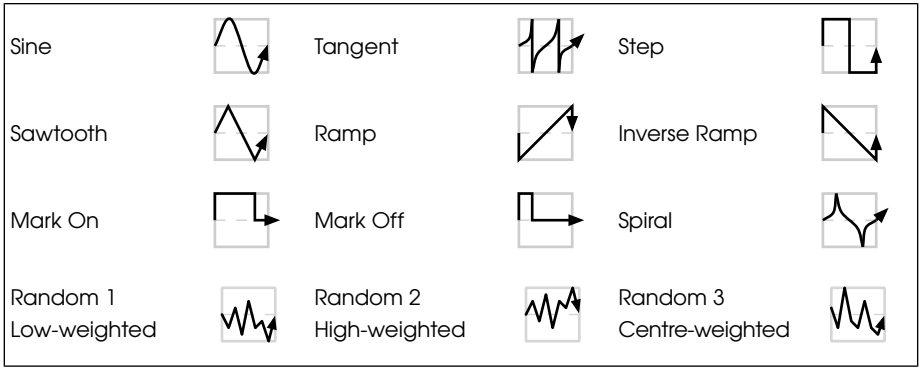


Figure 23.1. Effect Tables

- **Square Motion:** A Sawtooth table is applied to pan and tilt, with tilt given an Offset of 90 degrees.
- **Can-Can Motion:** A Step table is applied to pan, a Sine table is applied to tilt.
- **Fly In Motion:** A Step table is applied to pan, a Ramp table is applied to tilt.
- **Blue Step Colour Effect:** A Mark On table is applied to cyan and magenta.
- **Iris Chase:** A Sawtooth table is applied to the iris.

Tip

You can create many of these useful combinations of tables using the pre-defined effects palettes; see *Applying Predefined Effect Palettes (p.254)*.

23.1.2 Effect Attributes

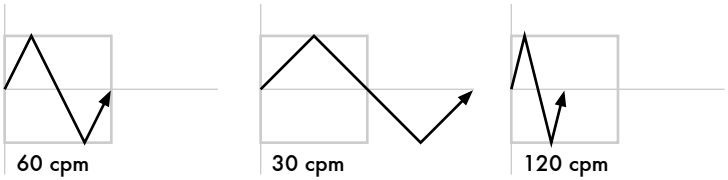
The appearance of the effect table can be manipulated through a combination of adjustments to its attributes: rate, size, offset, length and N-shot.

Effect Rate

The effect rate controls the speed of the effect in cycles per minute.

Adjusting an effect's rate globally will increase or decrease the number of cycles it completes per minute. When combining effects, you can use the rate attribute to build a specific look. For example, if you create an effect where a fixture performs a circular motion fading in on the first circuit, out on the second, then the effect on the intensity parameter would need to be half of the rate on the position parameters.

The following diagram shows how the value of a parameter assigned to the sawtooth table changes over time, with different rate values:



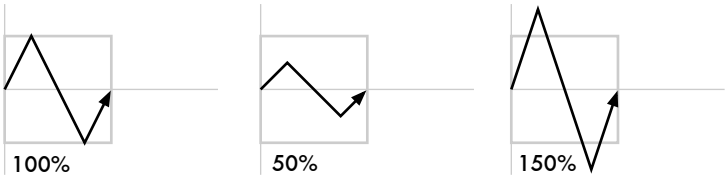
Effect Size

The range over which the parameter value varies. This is described in terms appropriate for the parameter, for example degrees for position parameters, or slots for slotted colour parameters.

For example, applying a Sine wave with the default size of 5Hz to a base value strobe rate of 5Hz will vary it from 0Hz through to 10Hz. You can decrease this range by adjusting the size: 2Hz will give a range between 3Hz and 7Hz.

When combining effects, adjusting specific parameters' effect sizes will change the look of the effect. For example, a circle effect comprising of a sine table on the pan and tilt can be modified to look like an elipse by altering the size of either pan or tilt.

The following diagram shows how the value of a parameter assigned to the sawtooth table changes over time, with different size values:

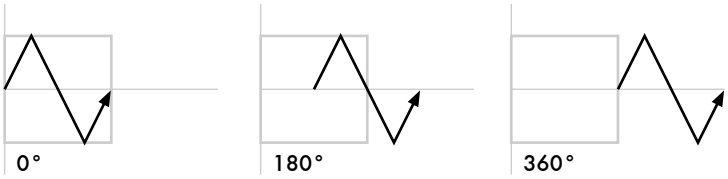


Effect Offset

The offset sets the effect start and finish point for each effect, so they can be staggered. It is assigned in degrees.

For example, to create an intensity ripple across a range of fixtures, divide 360 degrees by the number of fixtures and offset each fixture by multiples of this amount. For example, with six fixtures offset at 0, 60, 120, 180, 240, 300 degrees. The easiest way to do this is to use fanning; see *Fanning (p.173)*.

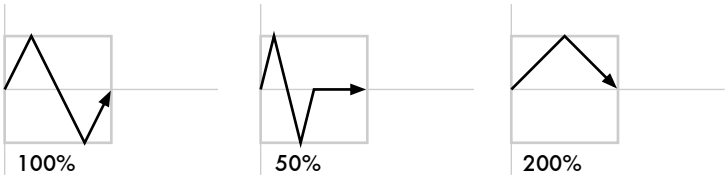
The following diagram shows how the value of a parameter assigned to the sawtooth table changes over time, with different offset values:



Effect Length

The length is the proportion of the effect's period that it is active for. It is assigned as a percentage.

The following diagram shows how the value of a parameter assigned to the sawtooth table changes over time, with different length values:



N Shot

This is the number of times that the effect repeats before finishing. A dash (—) in the N Shot cell denotes that the effect will run indefinitely.

23.2 Applying Predefined Effect Palettes

You can quickly apply effects to the current selection using predefined effects palettes in the Effect Directory; see *Figure 23.2, "The Effect Directory"*. Effects palettes for parameter functions not available in the current selection will be greyed out; for example the Iris Step palette is not available for Studio Color 575s as they do not have an iris parameter.

To open the Effect Directory:

- Open + Effect

Or:

- Effect, Effect

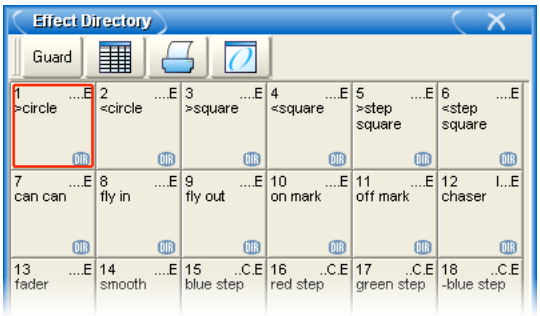


Figure 23.2. The Effect Directory

To apply an effects palette:

1. **1** Thru **5** @ **50** Enter : select the required fixtures and assign an intensity value
2. Effect **13** Enter : assigns Effect Palette 13. Studio Colors 1 to 5 fade their intensity between 0 and 100%.

You can also select the effect palette by pressing or clicking on its button in the Effect Directory window.

23.2.1 Adjusting Predefined Effects

Once you have applied a predefined effects palette to the selected fixtures, you can alter the attributes (Rate, Size, Offset and Length) of the effect using the parameter wheels; for explanations of the different attributes, see *Effect Attributes (p.252)*. The Wheels Toolbar shows the current parameter value being assigned by each wheel whenever the Effect key is selected; see *Figure 23.3, "The Wheels Toolbar showing Effect Attributes"*. For more on the different effect attributes see *Types of Effect (p.251)*.

Figure 23.3. The Wheels Toolbar showing Effect Attributes

23.3 Applying and Editing an Effect

23.3.1 Applying Effects with the Effects Engine

To apply an effect:

1. In the Programmer or editor, select the required fixtures and assign their base parameter values. These settings will be the 'underlying'

state for the effect: for example, the centre position of a fixture doing a circular movement effect. Equally, an intensity ripple between 0-100% will need a base value of 50% in order to use the full length of the effect.

2. Open + Effect : the Effects Engine and Effect Directory will open; see *Figure 23.4, "The Effects Engine"* and *Figure 23.2, "The Effect Directory"*.
3. In the Effects Engine, select the Table cells for the fixture parameters that you want to apply the effect to.
4. Press Set, choose the effect table from the menu and press Enter.

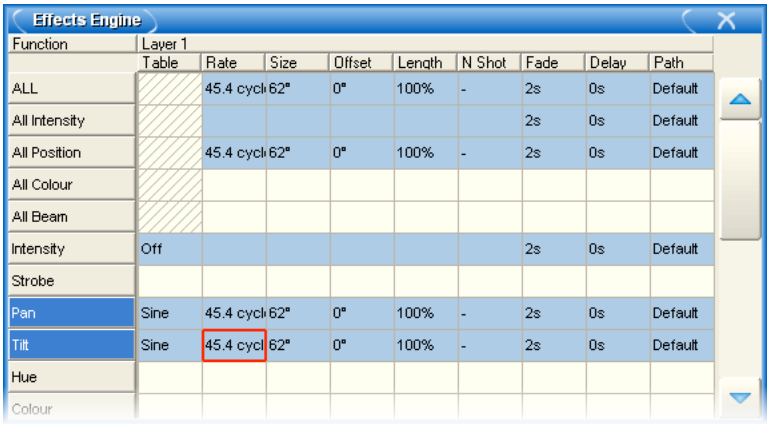


Figure 23.4. The Effects Engine

Once the effect table is assigned, you can modify the effect attributes either by editing the values in the spreadsheet or using the parameter wheels when the Effect key is selected.

Tip

You can quickly edit the attributes of all one parameter type (All Intensity, All Position, All Colour, All Beam) or for all parameters within the top five rows of the Effects Engine.

To edit the values in the spreadsheet:

1. Select the cells for the parameters that you want to edit, and press Set.
2. Type a new value, and press Enter.

Or, using the parameter wheels:

1. Press the Effect key.
2. Select the individual parameters that you want to edit in the left hand Function column of the Effects Engine window.
3. Adjust the Size, Rate, Offset and Length parameter wheels as required.

Note that the parameter wheels only control the current effects row, selected using the buttons in the Function column. There are buttons for all parameter types, for all intensity, all colour, all position, all beam, and for each individual parameter type; see *Figure 23.4, "The Effects Engine"*.

Tip

All effect attributes can be fanned using the Fan key and parameter wheels; remember to select the required parameter types in the Effects Engine Functioncolumn first. You can also enter a value of, say, **50** Thru **80** in a cell of the Effects Engine window. See *Fanning (p.173)*.

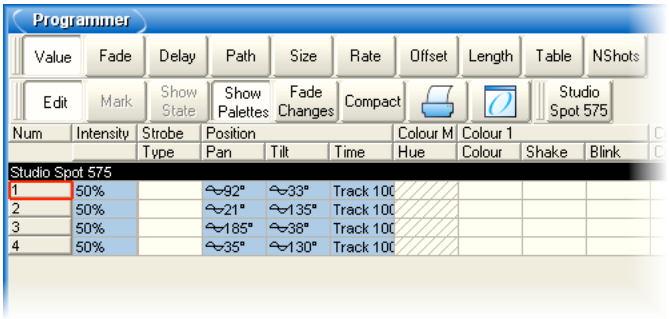
23.3.2 Applying and Editing Effects in the Programmer or Editor

Effects can be assigned directly to specific fixtures and their attributes in the Programmer. This is helpful when you wish to make small changes without opening the Effects Engine. Effect types are assigned and edited in the Table view, whilst effect attributes can be adjusted in the Size, Rate, Offset, Length, Table and N Shot views. The views are selected by buttons at the top of the Programmer or editor window.

For example, to create an offset circle effect using fixtures in positions from the current onstage look:

1. Main Toolbar → Programmer : open the Programmer.
2. **1** Thru **5** Position Suck : sucks position information from fixtures 1 through 5 that are currently live on stage.
3. Table : select the Table view in the Programmer; the pan and tilt column will read (Off).
4. Select all pan and tilt cells of the selected fixtures by clicking and dragging.
5. Set → Sine, Enter : choose the Sine table from the drop-down menu and confirm by pressing Enter.
6. Select Offset : select the Offset view in the Programmer; the pan and tilt column will read (0-Deg).
7. Select all pan and tilt cells of the selected fixtures by clicking and dragging.
8. Set **1** Thru **288** Enter : offset pan and tilt equally across the fixtures.

Once you have applied an effect to a parameter, it will appear in the Value view of the Programmer or editor with the effects symbol next to the value:



Tip

When assigning effect parameters such as Offset, remember that values 0 and 360 Degrees are the same. Fanning a range of fixtures from 0 through to 360 degrees of offset will mean that the first and last fixtures will share the same offset value.

23.3.3 Tracking Effects

By default, effects values track through to subsequent cues until a new value for the particular parameter is reached. You can turn effects on and off, set them to track through in the Table column of the Effects Engine, Programmer or editor.

In the Programmer for example:

1. Select Table view.
2. Select the cell of the parameter for which you want to turn the effect off or allow to track through, and press Set.
3. Select Off or Track from the drop down menu.

23.4 Cue Timing and Effects

When you record a cue, scene or palette that includes effects values, each fixture parameter has its fade, delay and path value in the usual way; see *Individual Parameter Timings (p.231)*. These timings control how the fixture parameter changes from its starting value to its *underlying* value in the cue or scene, as the cue or scene is played back.

You can assign separate effects timings (fade, delay and path) to control how the effects movement changes as the cue or scene is played back. *Figure 23.5, "Controlling Effect Transitions with Timing"* shows how different timing values control how a parameter with a step effect changes during playback of a cue.

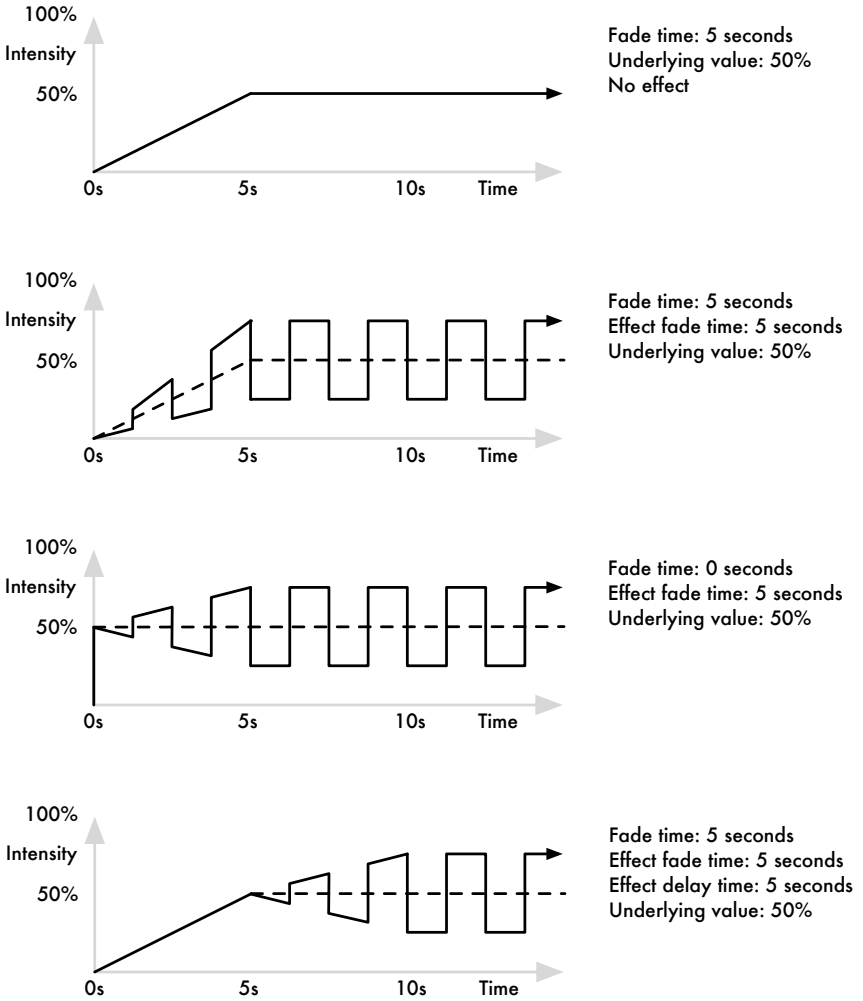


Figure 23.5. Controlling Effect Transitions with Timing

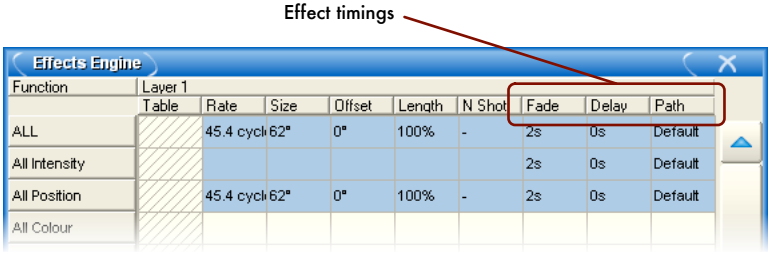
You can assign effect fade times using the command line:

1. Fixture **1** : select the fixtures you want to assign an effect time to, making sure that they have been given parameter values.
2. Effect Time **4**, Enter : assigns the effect fade time to 4 seconds.

To assign a effect delay time:

1. Fixture **1** : select the desired fixture(s).
2. Effect Time Time **2**, Enter : pressing Time twice assigns the delay time.

You can also view and assign effect timing values in the Effects Engine window:



23.5 Recording an Effect Palette

You can record any combination of effect parameter values into a palette:

1. In the Programmer or editor, select the fixtures, and assign the required effects. You can do this directly in an editor or using the Effects Engine.
2. Record, Effect : the Effect Directory window opens.
3. Select a location by pressing a button in the directory window.

This will only record parameters that have been **touched** in the Effect window, and does not include the parameters' underlying values. To include underlying intensity, position, colour, beam and time information use the **mask** function:

1. Select the fixtures, and assign the desired effect table.
2. Record, Effect
3. Select Mask from the Record Options Toolbar, and select the parameter types that you wish to record: Use I for intensity, Use P for position, Use C for colour, Use B for beam, and Use T for time values.

   For more on masking when recording palettes, see *Recording with Specified Masking (p.194)*.
4. Select a location from the Effect Directory window.

23.5.1 Naming an Effect Palette

You can give an effect palette a name that will be displayed in the Effect Directory:

1. Open + Effect : opens the Effect Directory.
2. Check that the Guard button is selected, so that you don't accidentally activate a palette when pressing its button in the directory.
3. Select the palette to be named.

4. Set **[name]** Enter : type in the name.

Tip

To name an effect palette immediately after recording it, pressing the Set key will open a Quickname window. Enter the palette name and select OK.

23.6 Using Effect Palettes in Programming

In the Programmer or editor, you can apply an effect by selecting it from the Effect Directory. The effect will be applied to the current fixture selection, providing that it contains parameter information for the selected fixtures. An iris step effect cannot therefore be applied to a fixture that has no iris function. By default, predefined effect palettes are direct; see *Direct Palettes (p.197)*.

For example:

1. Open + Effect : open the Effect Directory window.
2. **1** Thru **5** : select the fixtures.
3. (Effect 1) : select the effect from the Effect Directory window.

Or, using the command line:

- **1** Thru **5** Effect **1** Enter

23.7 Editing Effect Palettes

You can edit an effect palette by opening it in an editor window; you can then edit its contents in the same way as you edit values in any editor. See *Applying and Editing Effects in the Programmer or Editor (p.257)*.

To open an effect in an editor:

1. Open + Effect : open the Effect Directory.
2. Open + (Effect 1) : open the editor for (Effect 1).

You can select the editor view (Table, Size, Rate, Offset, Length, N Shot) you wish to edit in. Also ensure that the editor is active with its Edit button selected.

You can also open an effects palette with the command line. For example:

- Effect **1** Open

23.8 Deleting Effect Palettes

To delete an effect palette using the commandline:

1. Effect **1** Delete : deletes Effect Palette 1.
2. Click OK to confirm the delete.

Or, from the Effect Directory:

1. Press and hold Delete whilst selecting the palette to be deleted from directory.
2. Release the Delete key. A dialog will appear asking you to confirm the delete.
3. Click OK.

Tip

If you prefer not to be asked to confirm the delete action, select Don't Ask Me Again in the confirmation window. You can reenable the confirmation by going to Setup → Preferences → Programming and selecting Confirm before deleting directory items.

23.9 Copying and Moving Effect Palettes

To make a copy of an effect palette in a new location:

- Effect **1** Copy; Effect; **2** Enter : copies the contents of Effect Palette 1 to Effect Palette 2.
- Effect; **1** Position; **2** Copy Effect **2** Enter : copies fixtures that are in Effect Palette 1 and in Position 2 into Effect Palette 2.

Similarly, to move an effect palette to a new location:

- Effect; **1** Move Effect; **2** Enter : moves the contents of Effect Palette 1 to Effect Palette 2, leaving 1 empty.

If the destination effect palette already exists, you will be asked to choose an option: *Insert, Merge and Replace (p.198)*.

Section 24: Cuelist Playback

To play back a cuelist, it needs to be attached to a master. Masters can be either Physical, using the faders and controls on the front panel of the console, or Virtual, using on-screen master controls.

24.1 Playing Back from a Physical Master

Wholehog consoles have ten physical masters that cuelists can be attached to for playback. You can also move cuelists between masters, or copy them so that you create a copy of the cuelist on a new master. By attaching playback or expansion wings you can add more physical masters to a Wholehog system.

24.1.1 Attaching Cuelists to Masters

Cuelists are automatically attached to a master when you create them with the Record, Choose syntax; see *Recording to a Cuelist on a Master (p.211)*. Otherwise, to attach a cuelist to a master:

- List **1** Move Choose : attaches Cuelist 1 onto the chosen master.

Tip

You can reference several cuelists to different masters using pages, see *Working with Pages (p.303)*.

Moving and Copying Cuelists between Masters

Moving a cuelist between masters will detach it from its original master. Copying a cuelist between masters will leave the cuelist in its original location, and attach a copy of the cuelist to the new location.

To move a cuelist:

1. Press the Choose key of the master that you want to move the cuelist from.
2. Move
3. Press the Choose key of the master that you want to move the cuelist to.

To copy (and so duplicate) a cuelist:

1. Press the Choose key of the master that you want to copy the cuelist from.

2. Copy
3. Press the Choose key of the master that you want to copy the cuelist to.

Detaching a Cuelist from a Master

To detach a cuelist from a master:

- Delete + Choose : detaches the cuelist from the chosen master.

Note that this will not delete the cuelist itself or remove it from the cuelist directory, only detach it from the master.

24.1.2 Controlling Cuelist Playback

Once assigned to masters, cuelists can be played back using the master's contols, or using the main controls.

Master Controls

Each of the ten masters has a Choose, Go, Halt/Back and Flash key, as well as a fader; see *Figure 24.1, "The Master Controls"*.

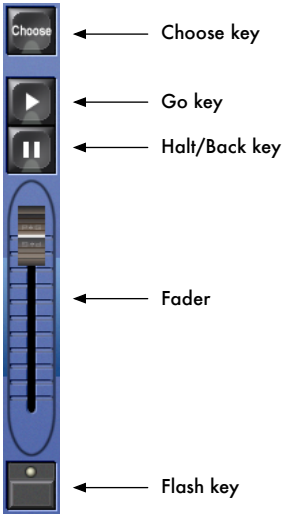


Figure 24.1. The Master Controls

By default, the controls work as follows:

- **Choose:** allows the master to be selected. If the blue LED is illuminated then it is the chosen master, and you can use the main playback controls to control this master.

- **Go:** if the cuelist is inactive pressing Go will activate it onstage. If the cuelist is already active then pressing Go will run the next cue, or restart paused fades (see Halt/Back below).
- **Halt/Back:** pauses any running fades. If there are no running fades then pressing Halt/Back will start a fade back to the previous cue.
- **Fader:** controls the intensity of fixtures under the control of this playback. When the fader is at full, fixtures appear on stage at their programmed intensity. As the fader level is reduced, the intensity of fixtures is reduced proportionally.
- **Flash:** momentarily puts the intensity of fixtures under the control of this playback to their full programmed value, as if the fader had been put to maximum.

You can customise the function of master controls to suit the requirements of the user or a particular show; see *Configuring Playback Controls (p.313)*.

Tip

Pressing or clicking on the Playback Bar is equivalent to pressing that master's Choose key.

The Main Controls

The main playback controls, positioned to the right of the masters (see *Figure 24.2, "The Main Playback Controls"*) work with the currently chosen master. You can also use them with another master by holding down the required Choose key while pressing a key from the main controls.

Figure 24.2. The Main Playback Controls

The main playback control keys are:

- **Assert:** reasserts control of fixture parameters by the chosen master if other masters have taken control under the Latest Takes Precedence rule; see *Asserting One Cuelist Over the Others (p.274)*.
- **Release:** releases the chosen master's control of fixture parameters, making the cuelist inactive; see *Releasing a Cuelist on a Master (p.266)*.
- **Goto:** you can use the Goto key with the command line to go to a specified cue in the chosen cuelist. For example:
    - Goto **3**, Enter : the cuelist on the chosen master plays cue 3.
- **Skip Forward/Skip Back:** steps forward or backward through the chosen cuelist by one cue. Cue timing information will not be used - the cue appears on stage immediately.
- **Halt/Back:** pauses any running crossfades on the chosen master. If there are no running crossfades then pressing Halt/Back will start a fade back to the previous cue.
- **Go:** if the chosen cuelist is inactive pressing Go will activate it onstage. If the cuelist is already active then pressing Go will run the next cue, or restart paused crossfades (see Halt/Back below).

24.1.3 Releasing a Cuelist on a Master

You can remove a cuelist's look from the stage, so that it relinquishes control of all fixture parameters and effectively turns the cuelist's output off; this is known as releasing the cuelist.

To release a cuelist on a master:

- Release : releases the currently chosen master.

Or:

- Release + Choose : use the Choose key of the master with the cuelist you wish to release.

Pressing Go after a cuelist is released will resume playback from the current cue. To have the cuelist go back to the beginning when it is released, see *Resetting Cuelists on Release (p.268)*.

Tip

You can release all playbacks at once by pressing Pig + Release.

If you have no other cuelists, scenes, or groups active when you release the cuelist, then releasing returns all fixture parameters to their default values. A fixture's default para-

meter values will be determined by the Fixture Library; you can change the default values in the Edit Fixtures window, see *Assigning a Custom Default (p.152)*.

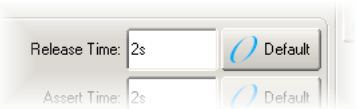
If you have other cuelists, scenes or groups active, then control of fixture parameters may be transferred to one of them on releasing the cuelist; see *Running Multiple Cuelists (p.273)*.

Release Time

When you release a cuelist and fixture parameters go to their default values, they do so over the release time, and this change may be visible if you have fixtures that are visibly live on stage (i.e. with intensities above zero). To assign the cuelist's release time:

1. Open + Choose : open the Cuelist window for the cuelist on the selected master.
2. Options → Cuelist : open the Options window and select the Cuelist pane.

   Alternatively, press Pig + Choose to open the Options window for the selected master.
3. Select the Release Time cell:



4. Set **5**, Enter : assign the desired release time.

You can also set a default release time for all newly created cuelists in the Cuelist pane of the User Preferences window:

- Setup → Preferences → Cuelist

Tip

If you have assigned a release time to a cuelist, and you want to revert to the default release time, press the Default button adjacent to the Release Time cell.

Auto Release

You can use auto release options to send fixture parameters to their default values at the end of a show, or to relinquish control of parameters for use by other cuelists when a cuelist is no-longer needed.

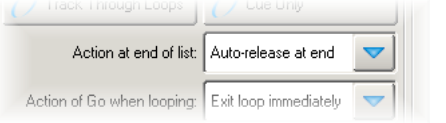
There are two Auto Release options for cuelists:

- **Auto-release at End:** Use this to automatically release the Cuelist at the completion of the fade and delay times of the last cue.

- **Add Release End Cue:** After the last cue has run another press of the Go key will release the cuelist rather than running the first cue again.

You can assign auto release options in the Playback Options window of each cuelist:

1. Open + Choose → Options → Cuelist
2. Select the desired release option from the Action at End of List menu:



You can also assign the default Auto Release options for new cuelists in the Action at End of List menu in the Cuelist pane of the User Preferences window:

- Setup → Preferences → Cuelist

Resetting Cuelists on Release

You can assign a cuelist to reset when released so it will proceed from the first cue when Go is pressed again. You can assign Reset on Release in the Playback Options window of each cuelist:

1. Open + Choose → Options → Cuelist
2. Select Reset on Release:

Alternatively, you can turn on Reset on Release for all new cuelists in the Cuelist pane of the User Preferences window:

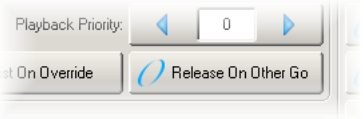
- Setup → Preferences → Cuelist

Releasing on Another Go

When running several cuelists in a show, see *Running Multiple Cuelists (p.273)*, you may want a cuelist to release when another cuelist is triggered. This effectively gives the cuelist the lowest possible playback priority; for more on playback priority, see *Changing a Cuelist's Priority (p.275)*. You can set Release on Other Go in the Playback Options window of each cuelist:

1. Open + Choose → Options → Cuelist

2. Select Release on Other Go:



Alternatively, you can turn on Release on Other Go for all new cuelists in the Cuelist pane of the User Preferences window:

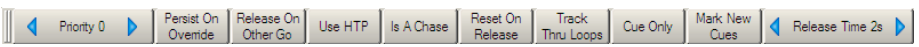
- Setup → Preferences → Cuelist

24.1.4 Cuelist Options

You can configure various options that determine the cuelist's priority, timing, and other properties that affect how it is played back in the Playback Options window of each cuelist:

1. Open + Choose : open the Cuelist window of the chosen master.
2. Options → Cuelist : open the Cuelist pane of the Cuelist Options window.

Alternatively, you can quickly access many cuelist options from the Cuelist Options Toolbar by holding down the Choose key of the master the cuelist is on:



Tip

You can quickly open the Playback Options window of a cuelist attached to a master by holding the Pig key and pressing the master's Choose key.

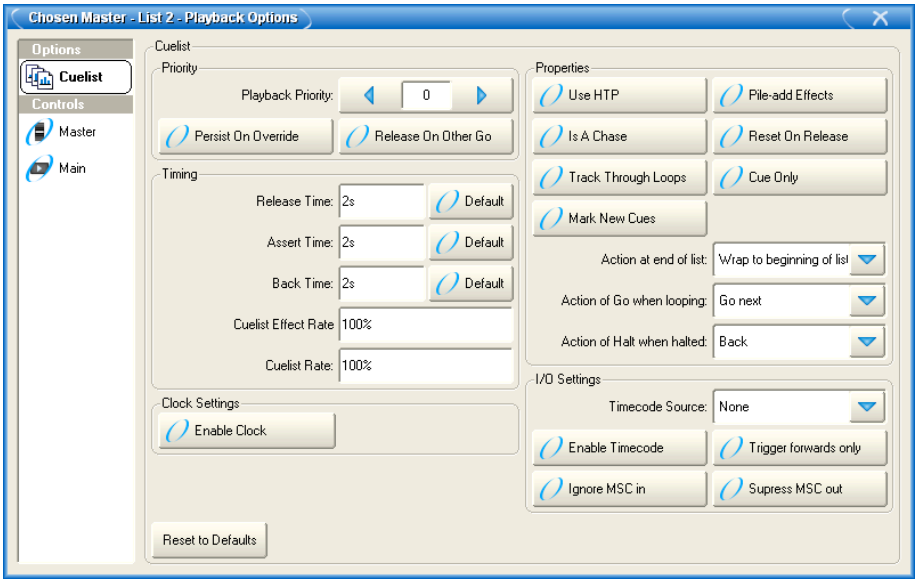


Figure 24.3. The Cuelist Pane of the Playback Options Window

You can configure the default settings for new cuelists in the Playback Defaults pane of the User Preferences window:

- Setup → Preferences → Playback Defaults

You can also customise the function of each of the master controls and main controls; see *Configuring Playback Controls (p.313)*.

Tip

You can revert all of the settings in the Cuelist pane of the Playback Defaults window by pressing the Reset to Defaults button in the bottom left corner of the window.

Cuelist Timing and Rate Settings

You can assign several settings that control cuelist timing:

Timing Function	Default	Notes
Release Time	2s	The time over which parameter values go to their default values when the cuelist is released; see *Releasing a Cuelist on a Master (p.266)*.
Assert Time	2s	The time in which parameters go to their values determined by the cuelist when the cuelist is asserted; see *Asserting One Cuelist Over the Others (p.274)*.
Back Time	2s	The time in which the cuelist steps back to the previous cue when the Halt key is pressed twice (to first halt the cuelist and then send it back).
Cuelist Rate	100%	Default proportion rate of the cuelist. A rate of 50% will double all cue timings, a rate of 200% will halve all cue timings.

Tip

If you have assigned a release, assert or back time to a cuelist, and you want to revert to the default time, press the Default button adjacent to the appropriate cell.

Cuelist Wrapping

Wrapping decides what happens to a cuelist when it reaches the final cue. Configure the wrapping in the Action at End of List menu:

- **Wrap to beginning of list:** Pressing Go after the final cue is reached sends the cuelist to its first cue.
- **Add release end cue:** Pressing Go after the final cue is reached releases the list and sends it to its first cue.
- **Auto-release at end:** The cuelist is released as soon as the last cue in the cuelist has completed all its fade and delay times.
- **Don't allow wrapping:** The cuelist stays on the final cue until released or sent backwards.

Action of go when Looping

When the cuelist is performing a continuous loop with the use of a link cue, you can configure the effect of pressing the Go key using the Action of Go When Looping menu:

Action	Notes
Exit loop immediately	Jumps the cuelist to the link cue at the end of the loop. Use a wait time on the cue after the link if you want to go to that cue automatically when exiting the loop.
Exit loop at end	Allows the loop to proceed to the last cue before jumping to the link cue at the end of the loop. Use a wait time on the cue after the link if you want to go to that cue automatically when exiting the loop.
Restart	Jumps immediately to the first cue in the loop.
Stop at next	Stops at the next cue in the loop.
Ignore	Ignores any press of the Go key whilst in a loop and the press is during an actively running wait time.

For more information on loops, see *Working with Loops and Links (p.240)*.

Action of Halt when Halted

By default, pressing the Halt key when a cue is halted steps the cuelist back a cue in the assigned back time, see *Cuelist Timing and Rate Settings (p.270)*. You can change this action using the Action of Halt When Halted menu:

Action	Notes
None	The current cue remains halted.
Resume	The current cue continues to fade.
Release	The cuelist is released, see *Releasing a Cuelist on a Master (p.266)*.

Configuring Fader Actions

You can configure a master's fader to trigger actions. A fader's actions can be configured in the Master pane of the cuelist's Playback Options window:

- **Go Off Zero:** The cuelist is triggered when the fader is moved from zero, as if you had pressed the Go key.
- **Release At Zero:** The cuelist is released when the fader returns to zero; see *Releasing a Cuelist on a Master (p.266)*.

Configuring Flash Button Actions

You can configure the level and actions of the Flash key:

Setting	Default	Notes
Flash on/Flash off	On	Set to off to prevent accidentally flashing of a cuelist's contents. When on, pressing the Flash key will output the cuelist's intensities at their programmed values, irrespective of the fader position.
Level	100%	The proportion of the programmed intensity that a cuelist's contents is flashed to. If programmed levels are 60% and the flash level is set to 50% the flashed output intensity will be 30%.
Solo	Off	Flashes the contents of the cuelist to the full programmed level, whilst sending the intensities output by all other masters (including Virtual Masters) to zero.
Latch	Off	If set to on, the Flash key stays on as if it were being held down, until you press it again.
Go on flash	Off	The cuelist is triggered when you press the Flash key, as if you had pressed the Go key.
Release on flash	Off	The cuelist is released when you press the Flash key.

24.2 Running Multiple Cuelists

Because Wholehog consoles can simultaneously run ten cuelists on masters (and more if virtual masters and playback wings are used) the question arises as to which master actually has control over a particular fixture parameter. To decide which master takes precedence Wholehog OS applies the following rules:

- **For intensity parameters:** by default, intensity parameters are controlled on a Latest Takes Precedence (LTP) basis, therefore the value of an intensity parameter that appears in several cuelists will be output from the cuelist with the highest playback priority; see *Changing a Cuelist's Priority (p.275)*. In addition, you can assign cuelist options so that a master works on a Highest Takes Precedence (HTP) basis; this means that if several masters have programming for the same intensity parameter, the highest programmed level will be output to stage. For a full discussion of HTP and LTP, see *HTP and LTP (p.11)*.
- **For position, colour and beam parameters:** Wholehog OS deals with position, colour and beam parameters on a Latest Takes Precedence (LTP) basis. If several masters have programming for the same parameter then the value from the most recently activated master will override the value from previously activated masters. Parameters that are only programmed into a single master will remain at that value. When you release the most recently activated master, control will be returned to the previously activated master. Alternatively you can assert a previously activated master's parameters so that they override the most recently activated master; see *Asserting One Cuelist Over the Others (p.274)*. You can prevent an (LTP) parameter from being overridden by master actions or asser-

tions by giving its cuelist a high playback priority; see *Changing a Cuelist's Priority (p.275)*.

Tip

The Programmer, or the current editor with blind mode off, will always have priority over all masters and virtual masters.

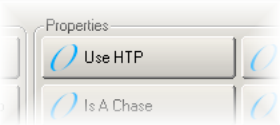
24.2.1 Using HTP and LTP

You can switch a cuelist's precedence from LTP to HTP, allowing intensity parameters that have programming to be output at their highest level rather than the most recently activated level. For example, you may have a series of intensity chases that you wish to fade in and out over a stage look without overriding the intensity information of the original look, or when touring with smoke machines you may wish to manually boost the level of smoke programmed into the main cuelist to combat changes in air conditioning or venue size at specific points in the show.

For a full explanation of LTP, see *HTP and LTP (p.11)*.

To assign a cuelist's precedence to HTP:

1. Open + Choose → Options → Cuelist
2. Select Use HTP:



Alternatively, you can turn on Use HTP for all new cuelists in the Cuelist pane of the User Preferences window:

- Setup → Preferences → Cuelist

Important

If you have an HTP master with the fader up (i.e. intensities above zero), then using Release or Pig + Release has no effect on the intensity parameters. To release the intensities of HTP masters, bring the fader to zero. For more on releasing cuelists, see *Releasing a Cuelist on a Master (p.266)*.

24.2.2 Asserting One Cuelist Over the Others

When you have several cuelists active at the same time, control of fixture parameters programmed into one cuelist may be taken by another cuelist that also has programming for that fixture parameter. For example, if Cuelist 1 has programming for desk channels

1-3, and Cuelist 2 has programming for desk channels 3-6, then running a cue in Cuelist 2 will override the intensity parameter of desk channel 3.

You may want to return control of desk channel 3 to Cuelist 1 without having to run a cue in Cuelist 1; this is known as asserting Cuelist 1. Asserting a cuelist forces all fixture parameters to their programmed value in the cuelist.

To assert parameters on the cuelist attached to Master 3, for example, press and hold the Choose key for Master 3, and press the Assert key.

The Assert Time

When you assert a cuelist, the parameters that have been asserted change to their new values over the assert time. The default is 2 seconds, but you can assign your preferred assert time for each cuelist:

1. Open + Choose → Options → Cuelist
2. Select the Assert Time cell:

3. Set **5**, Enter : change the assert time to 5 seconds.

Alternatively, you can assign the Assert Time for all new cuelists in the Cuelist pane of the User Preferences window:

- Setup → Preferences → Cuelist

Tip

If you have assigned an assert time to a cuelist, and you want to revert to the default assert time, press the Default button adjacent to the Assert Time cell.

24.2.3 Changing a Cuelist's Priority

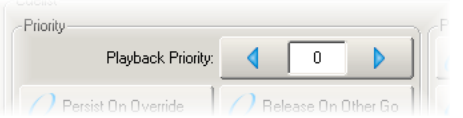
Under the LTP rule, the most recent action determines the value of a fixture parameter; see *Running Multiple Cuelists (p.273)*. However, you can override this precedence by assigning cuelists different priorities, so that cuelists with a higher priority take precedence over those with a lower one. If their priority is equal, then the LTP rule is used to determine which cuelist will take precedence and determine the parameter's value.

A cuelist's default priority is 0, and you can assign the priority value in increments of 10. For example, if the priority of the cuelist attached to Master 5 is at default (0) and the priority of that on Master 4 is 50, then a Go triggered on Master 5 will not override common parameters currently active on Master 4. Conversely, you can apply a minus

priority so if the cuelist on Master 3 has a priority of -50, common parameters on Master 5 will override those on Master 3.

To change a cuelist's priority:

1. Open + Choose → Options → Cuelist
2. Select the Playback Priority cell:



3. Set **50**, Enter : change the priority to 50.

Alternatively, you can assign the Playback Priority for all new cuelists in the Cuelist pane of the User Preferences window:

- Setup → Preferences → Cuelist

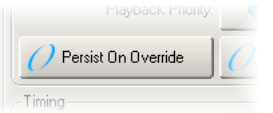
In the event that two or more cuelists share the same priority level, normal LTP rules are applied.

Persist on Override

Wholehog OS automatically releases cuelists when all of their parameter contents have been overridden by other cuelists. However, sometimes it is useful to return to a cuelists's look when overriding cuelists have been released; in this case you can use Persist on Override. When this option is activated, the overridden cuelist will not automatically release and will remain active when the overriding cuelist is later released.

To turn Persist on Override on for a cuelist:

1. Open + Choose → Options → Cuelist
2. Select Persist on Override:



Alternatively, you can assign Persist on Override for all new cuelists in the Cuelist pane of the User Preferences window:

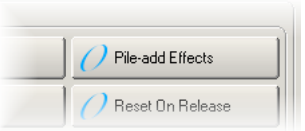
- Setup → Preferences → Cuelist

24.2.4 Multiple Cuelists with Effects

If a cuelist contains parameters that are running an effect, when another cuelist or scene changes the underlying values of those parameters the effect continues to run. Use Pile-Add FX to allow the second cuelist or scene to override the effect as well as the underlying values.

For example, to allow the cuelist on Master 10 override effects running on other masters:

1. Open + Choose : open the Cuelist window for Master 10.
2. Options : open the cuelist's Playback Options window.
3. Select the Cuelist pane and select Pile-Add FX:



24.3 Playback with a Virtual Master

You can run cuelists without assigning them to a physical master by using virtual masters. Virtual masters are always at full intensity, so the intensity of fixtures is that programmed in the cues. An almost unlimited number of virtual masters running different cuelists can be in operation at any one time.

You can operate virtual masters from the Cuelist Directory window, from the Cuelist window, or from the command line.

Tip

You can press List + Release to release all running cuelists playing back as virtual masters.

24.3.1 Running Virtual Masters from the Cuelist Directory Window

You can run cuelist virtual masters from the Cuelist Directory window:

- Open + List

Or:

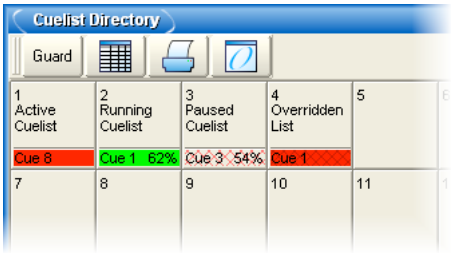
- List, List

To run a cuelist, make sure that the Guard button in the Cuelist Directory window is deselected. Then press a cuelist button in the directory, and it will playback onstage, as

if Go had been pressed on a physical master. Holding your finger down on the cuelist's button is the equivalent of holding the master's Choose key, and you can then use the central playback controls.

The cuelist buttons in the directory are coloured to show the cuelist status:

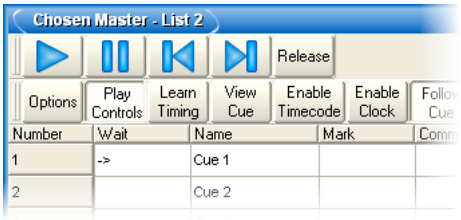
- **Red:** the cuelist is active on stage.
- **Green:** the cuelist is running a cue.
- **Red hatched:** the cuelist is halted.
- **Black hatched:** the cuelist is overridden.



24.3.2 Running Virtual Masters from the Cuelist Window

To run a cuelist virtual master from the cuelist window:

1. Open + List : open the Cuelist Directory window.
2. Check that the Guard button is depressed.
3. Open + (List 1) : open the required cuelist.
4. Press the Play Controls button in the Cuelist window. The on-screen playback controls will appear:



The controls are, from left to right, the Go, Halt/Back, Skip Back, Skip Forward, and Release buttons. These function in the same way as their front panel equivalents; see *The Main Controls (p.265)*.

24.3.3 Running Virtual Masters from the Command Line

To run a cuelist on a virtual master from the command line:

- List **1**, Enter : sends a Go command to cuelist 1.

24.4 Understanding Feedback for Cuelists

There are several ways in which you can tell the status of the console's output:

- The status of masters is shown by the playback control key LEDs and the on-screen Playback Bar.
- You can use a cuelist window to follow the progress of running cuelists.
- The total output of all fixtures' parameter values is shown in the Output window, and the total output of all fixture's intensities is shown in the Levels View window.

24.4.1 Control and Playback Toolbar Feedback

Playback Control LEDs

The LEDs of the playback controls give information about the cuelist's status:

- **Go key (Green):** When solidly lit, this indicates that a fade is in progress. When flashing it indicates that a fade has been paused.
- **Halt/Back key (Red):** When solidly lit, this indicates that this playback is controlling parameters other than intensity. When flashing it indicates that its control of those parameters has been overridden by other playbacks.
- **Flash key (Red):** When solidly lit, this indicates that this playback is controlling intensity. When flashing it indicates that its control of intensity has been overridden by other playbacks.

The Playback Bar

Figure 24.4. The Playback Bar

The Playback Bar is located at the bottom of the left touchscreen, giving feedback for each master; see *Figure 24.4, "The Playback Bar"*. For each master, the Playback Bar displays the following information:

- If the master is empty, its number is shown. Console masters are numbered 1 to 10, while masters on playback wings are numbered 1/1 to 1/10 for the first wing, 2/1 to 2/10 for the second wing, and so on.
- The number and name of the cuelist. This is shown in blue if the master has been held over after a page change; see *Options When Changing Page (p.304)*.The name and number will appear in lavender if the master is from a template page; see *The Template Page (p.310)*.
- The current cue and its overall time. When the cue is running, it is displayed in green text and the time counts down. If the cuelist has been released, then .... is displayed, with the next cue shown below.
- The next few cues and their times. If you want to see more cues, click and drag the top of the Playback Bar upwards to make it larger.
- The master level as a percentage. If the master is below 100%, then a red bar appears indicating the level. It is possible for the position of the physical fader to be different to the master level of the cuelist, in which case the vertical bar will be blue; see *Matching Levels When Changing Page (p.305)*.
- Whether the cuelist is a chase. If it is, then its rate in BPM is shown; see *Using a Cuelist as a Chase (p.286)*.
- Any options set for the cuelist. The symbols used are shown below.

Symbol	Description
H	The cuelist is working under the **HTP** rule.
P	The cuelist is set to Persist on Override. See *Changing a Cuelist's Priority (p.275)*.
R	The cuelist is set to Release on Other Go. See *Releasing on Another Go (p.268)*.
	The cuelist has a high priority. See *Changing a Cuelist's Priority (p.275)*.
	The cuelist has a low priority. See *Changing a Cuelist's Priority (p.275)*.
	The scene uses the master as an IPCB fader. See *IPCB Fader Mode (p.301)*. Note that this applies to scenes only.
M	The cuelist uses the master as a manual fader. See *Manual Crossfading (p.285)*.

Using the Playback Bar with Playback Wings

Whether wings are connected or not, multiple Playback Bars can be displayed using the Wings pane of the Control Panel. You can drag these and dock them at the edge of an external display placed adjacent to the wing, to make cross-referencing the screen display and the physical wing playback controls easier.

If your external display is set to a resolution higher than 1024x768, you can drag the ends of the Playback Bar to 'stretch' it to better align with the spacing of the controls of the wing.

For information on adding and setting up playback wings, see *Adding Playback Wings (p.93)*.

24.4.2 Cuelist Feedback

You can view in detail the running of the cues of a specific cuelist by opening the cuelist window (see *Figure 24.5, "The Cuelist Window with a Cue Running"*):

- Open + Choose

Or:

- Double click the Playback Bar above the required cuelist.

Or:

- Open + (List 1) : select the cuelist from the cuelist directory.

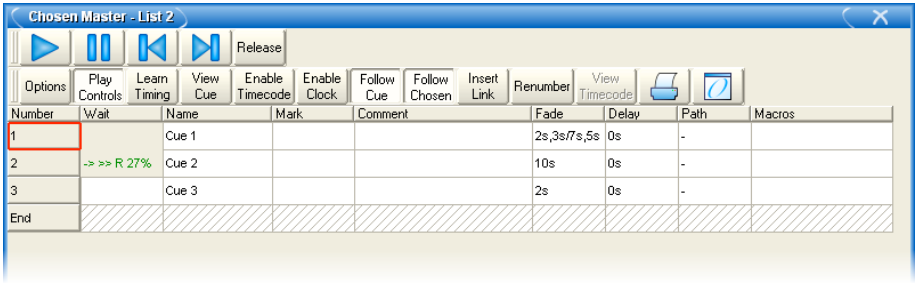


Figure 24.5. The Cuelist Window with a Cue Running

The current cue is displayed with an arrow in the wait column of the cuelist, when triggered the arrow turns green and the letter R(for Running) is displayed; the cue's progress is indicated by the percentage completed in the same column. Pausing a cue will turn the arrow red and the letter H(Halted) is displayed.

Customising Cuelist Feedback

There are several view options selected by buttons at the top of Cuelist window:

- **Play Controls:** displays alternative play controls at the top of the Cuelist window. These are useful for running virtual masters, see *Running Virtual Masters from the Cuelist Window (p.278)*.
- **View Cue:** opens the current cue (as denoted by an arrow in the wait column) in an editor.
- **Follow Cue:** selecting Follow Cue from the top of the Cuelist window will make the list of cues scroll to keep the current cue in view as the cues are played back.

- **Follow Chosen:** during playback, you may not want to have multiple Cuelist windows open. Select Follow Chosen from the top of any Cuelist window so Wholehog OS automatically displays the cuelist of the currently chosen master. If Follow Chosen is off, the same cuelist will always be shown in the window irrespective of the chosen master.
- **View Timecode:** turn the display of timecode information on or off.

24.4.3 The Output Window

The Output window displays the output value of all parameters controlled by Wholehog OS from all cuelists, virtual cuelists, scenes, the Programmer and other editors, and parked parameters. It provides an accurate indication of the status of shared parameter values when multiple cuelists are running simultaneously; see *Figure 24.6, "The Output Window"*.

To open the Output window:

- Press and hold the Open key, then select Output from the Main Toolbar.

Or:

- Select Output from the View Toolbar at the top of the left hand touchscreen.

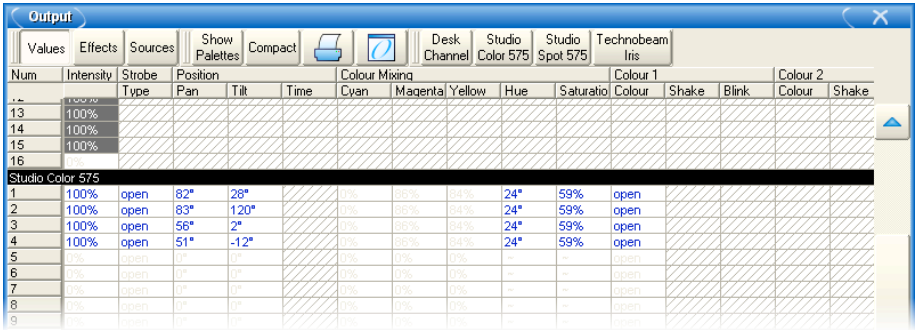


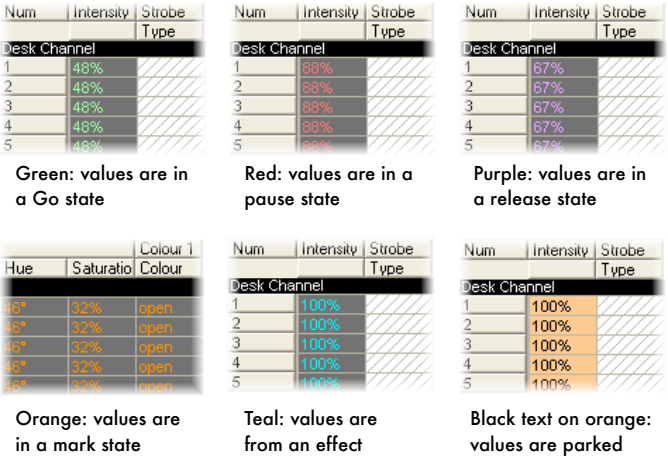
Figure 24.6. The Output Window

The Output window by default displays raw parameter values; you can configure it via buttons at the top of the window to display output information in the following ways:

- **Values:** displays the raw parameter values.
- **Effects:** displays the base value before the effect is applied, along with a percentage indication of the effect cycle.
- **Sources:** displays the source that currently has control of a parameter, for example, the Programmer or a cuelist and cue number.
- **Show Palettes:** as with sources, displays the palette that is supplying the parameter value.

- **Compact:** Compacts the display of information in the window; see *Compact Mode (p.105)*.

Crossfading values will appear in the Output window in the following colors:



24.4.4 The Levels View Window

The Levels View window displays the output value of all intensities controlled by Wholehog OS from all cuelists, virtual cuelists, scenes, the Programmer and other editors, and parked parameters. It provides an accurate indication of the status of shared intensity values when multiple cuelists are running simultaneously; see *Figure 24.7, "The Levels View Window"*.

To open the Levels View window:

- Press and hold the Open key, then select Levels from the Main Toolbar.

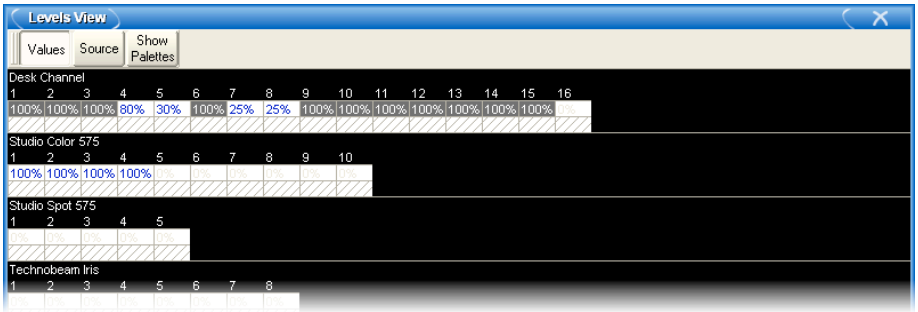
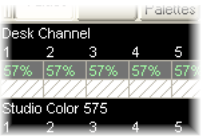


Figure 24.7. The Levels View Window

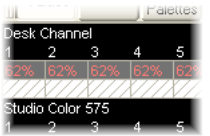
The Levels View window by default displays raw intensity values; you can configure it via buttons at the top of the window to display output information in the following ways:

- **Values:** displays the raw parameter values.
- **Source:** displays the source that currently has control of an intensity, for example, the Programmer or a cuelist and cue number.
- **Show Palettes:** as with source, displays the palette that is supplying the intensity value.

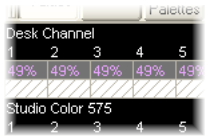
Crossfading values will appear in the Levels View window in the following colors:



Green: values are in a Go state

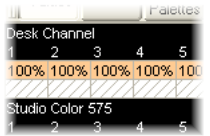


Red: values are in a pause state



Purple: values are in a release state

Teal: values are from an effect



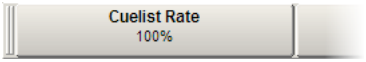
Black text on orange: values are parked

24.5 Advanced Cuelist Playback

24.5.1 Overriding Cuelist Rate During Playback

You can alter all rate timings of the currently chosen cuelist in two ways:

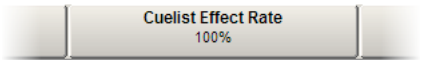
- **With the Rate Wheel:** The centre-sprung wheel on the left of the console allows the fade rate to be momentarily modified to speed up or slow down crossfades.
- **With the left-hand Parameter Wheel:** When you hold down a Choose key, you can use the left-hand parameter wheel to control the crossfade rate of the selected master. This modified rate will persist until you make another change. You can also set this rate in the Cuelist Options window, and you can set the default rate for new cuelists in Setup → Preferences → Cuelist.



The rate level is displayed as a percentage with a default of 100%. A cuelist running a cue that is 10 seconds long will complete the cue in 5 seconds with an accelerated rate of 200%, or in 20 seconds with a decelerated rate of 50%.

24.5.2 Overriding Cuelist Effect Rate During Playback

You can alter effect timings for all effects in the currently chosen cuelist or scene with the second parameter wheel when holding down Choose. Adjusting this rate will increase or decrease the rate of all effects within the assigned cuelist or scene. This modified rate will persist until you make a further change. You can also set this rate in the Cuelist Options window, and you can set the default rate for new cuelists in Setup → Preferences → Cuelist.



The Cuelist Effect Rate level is displayed as a percentage with a default of 100%. The programmed rate of running effects will be accelerated with a rate above 100% and decelerated with a rate below 100%.

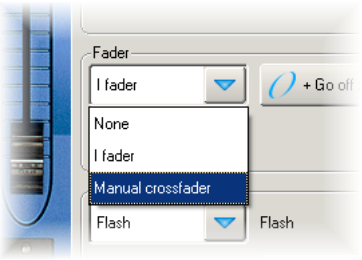
24.5.3 Manual Crossfading

You can assign any cuelist to be operated manually, allowing you to perform the crossfades from one cue to the next manually using the fader. Once a cuelist's Manual Fade option is selected, the Master's fader will no longer control intensity but instead the crossfade progress of all parameters from the current cue to the next; starting when moved from any end stop, finishing when the opposite end stop is reached.

If you select Manual Fader mode when the fader is at 50%, a manual fade cannot take place until the fader is moved to and then from an end stop, further moves from end stops will manually work through the cuelist sequentially.

To assign a cuelist's Manual Fade function:

1. Open + Choose → Options → Master
2. Select Manual Crossfader from the Fader menu:



Manual crossfade mode will be indicated on the Playback Bar above the selected master by Ⓜ.

Tip

You can still run cues to time when manual fader mode is selected by pressing the master's Go key. Note that you have no individual fader control of intensity and accidentally moving a fader will start to run the next cue manually.

24.5.4 IPCB Fader Mode

You can adjust the output values of any intensity, position, colour or beam parameter information in any cuelist by assigning its fader as a IPCB fader.

To assign a cuelist to use the IPCB fader function:

1. Open the Programmer from the Main Toolbar. In the Programmer select the fixtures and parameters that you wish to adjust with the fader, then assign a maximum level.
2. Record **1** Enter : record the cue to the chosen master.
3. Pig + Choose → Playback Options : open the options window for the cuelist's master.
4. In the Master pane, select IPCB Crossfader from the Fader drop down menu.

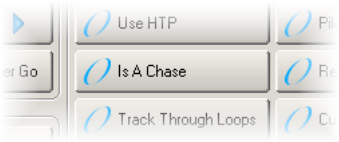
You can now adjust the value of the parameters contained in the IPCB fader cue by adjusting the master's fader level.

24.5.5 Using a Cuelist as a Chase

You can use a cuelist to make a chase. Any wait times are ignored, and each cue becomes a step in the chase where the rate is set in Beats Per Minute(BMP).

To use a cuelist as a chase:

1. Open + Choose → Options → Cuelist
2. Select Is a Chase:

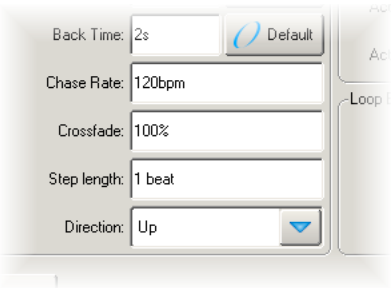


The Playback Bar displays Chase and the rate (which defaults to 120 bpm):

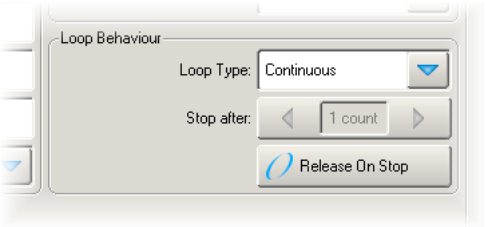
Each cue step is by default equivalent to a beat, so to set a chase that advances every second the rate needs to be 60 bpm. By holding down the master's Choose key you can modify the chase rate and crossfade times on the parameter wheels:

When you select Is a Chase the Cuelist pane of the Playback Options window, the following chase options appear:

- **Chase Rate:** the speed of the chase defined in Beats Per Minute (bpm).
- **Crossfade:** the amount of each step that a crossfade is active for, as a percentage.
- **Step Length:** by default each cue step is the equivalent to a beat. This is helpful when you enter a rate using Tap Sync, but then wish the chase to step at half or double speed. For more on Tap Sync, see *Adjusting Chase Rate with Tap Sync (p.288)*.
- **Direction:** four directions are available: Up, stepping up through cue numbers; Down, stepping down through cue numbers; Random, stepping randomly through cue numbers; and Bounce, stepping up then down through cue numbers.



You can also configure the following loop types in the Cuelist pane of the Playback Options window:



- **Continuous:** the chase steps indefinitely until paused or released.
- **Stop On Last:** the chase stops at the last cue in the cuelist until released or triggered again with a Go.
- **Release On Last:** the cuelist chase is released when it reaches the final step.
- **Stop On First:** the chase completes one cycle and stops on the first cue until triggered again.

If any loop type other than continuous is chosen then you can assign the number of cycles the chase completes before the loop behaviour is actioned. Selecting Release on Stop releases the chase cuelist either when it stops because of an actioned loop behaviour or because of a manual stop using the Halt key.

Tip

The Playback Options of a master can be quickly accessed by holding Pig and pressing the master's Choose key.

Adjusting Chase Rate with Tap Sync

A cuelist chase can be manually sync'ed to a beat, such as a piece of music, using Tap Sync. Once sync'ed Wholehog OS maintains the chase rate until a new one is assigned.

To adjust the rate of a chase using Tap Sync, hold down the Choose key of the master the chase is attached to, while pressing the master's Go key repeatedly to the required beat. Wholehog OS will learn the speed of the chase from you, in a minimum of two beats; after this, you can release the Choose key.

Note that you can only use Tap Sync with chases loaded onto physical masters, not virtual ones.

24.5.6 Cuelists and Tracking

You can define how a cuelist deals with tracking in the Cuelist pane of the Playback Options window (shown in *Figure 24.3, "The Cuelist Pane of the Playback Options Window"*):

- Open + Choose → Options → Cuelist

The options are:

Option	Default	Notes
Cue Only	Off	Use this to run the cuelist without **tracking**. Any parameter that has no value in a cue will go to its **default value**, rather than tracking through from the previous cue.
Track Through Loops	Off	Determines whether parameter values track from the end of a loop back to the beginning. See *Tracking Through Loops (p.242)* for a full description.

24.5.7 Triggering Automatic Tasks When a Cue Runs

You can use Trigger Macros to perform a variety of tasks when a cue runs. Macros are simple text instructions placed in the cue's Macro cell:

1. Open + Choose : open the Cuelist window.
2. Select the Macro cell for the desired cue, and press Set.
3. Type in the Macro command, then press Enter.

For a full description of the available macro commands, see *Automating the Console Using Macros (p.329)*.

Tip

You can display a list of available commands on the console by selecting the Macro cell in the Cuelist window and pressing the Set key.

Tip

You can enable trigger macros to occur when using the Back key to go backwards through a cuelist. See *Configuring Master Controls (p.314)*.

Section 25: Scene Playback

To play back a scene, it needs to be attached to a Master. Masters can be either Physical, using the faders and controls on the front panel of the console, or Virtual, using on-screen master controls.

25.1 Playback Attached to a Physical Master

Wholehog consoles have ten physical masters that scenes can be attached to for playback. You can also move scenes between masters, or copy them so that you create a copy of the scene on a new master. By attaching playback or expansion wings you can add more physical masters to a Wholehog system.

25.1.1 Attaching a Scene to a Master

To attach a scene to a master:

- Scene **1** Move, Choose

Alternatively you can select the scene from the Scene Directory:

- (Scene 1) Move, Choose

The name of the scene and the fader level is shown on the Playback Bar immediately above the master:

Moving and Copying Scenes between Masters

Moving a scene between masters will detach it from its original master. Copying a scene between masters will leave the scene in its original location, and attach a copy of the scene to the new location.

To move a scene:

1. Press the Choose key of the master that you want to move the scene from.
2. Move
3. Press the Choose key of the master that you want to move the scene to.

To copy (and so duplicate) a scene:

1. Press the Choose key of the master that you want to copy the scene from.
2. Copy
3. Press the Choose key of the master that you want to copy the scene to.

Detaching a scene from a Master

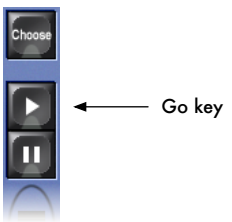
To detach a scene from a master:

- Delete + Choose : detaches the scene from the chosen master.

Note that this will not delete the scene itself or remove it from the scene directory, only detach it from the master.

25.1.2 Playing Back the Scene

To play back the scene, press the Go key:



The scene will fade in with the times recorded with it, and the fader acts as an **inhibitive master** for the scene. If the fader is below 100%, then the Flash key will momentarily bring the intensity parameters in the scene to their full programmed level, just as if the fader had been put to full.

You can also play scenes back using the Go key of the main playback controls, positioned to the right of the masters (see *Figure 24.2, "The Main Playback Controls"*). These controls work with the currently chosen master; you can also use them with another master by holding down the required Choose key while pressing a key from the main controls. See *Controlling Cuelist Playback (p.264)*.

Tip

You can configure the way the playback controls work, for example to set the level that the Flash key brings the scene to, or to disable it altogether. See *Configuring Playback Controls (p.313)*.

25.1.3 Releasing a Scene on a Master

You can remove a scene's look from the stage, so that it relinquishes control of all fixture parameters and effectively turns the scene's output off; this is known as releasing.

To release a scene on a master:

- Release : releases the currently chosen master.

Or:

- Release + Choose : use the Choose key of the master with the scene you wish to release.

Tip

You can release all playbacks at once by pressing Pig + Release.

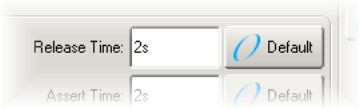
If you have no other cuelists, scenes, or groups active when you release the scene, then releasing returns all fixture parameters to their default values. A fixture's default parameter values will be determined by the Fixture Library when the fixture is created; you can change the default values in the Edit Fixtures window, see *Assigning a Custom Default (p.152)*.

If you have other cuelists, scenes or groups active, then control of fixture parameters may be transferred to one of them on releasing the scene; see *Running Multiple Scenes (p.294)*.

Release Time

When you release a scene and fixture parameters go to their default value, they do so over the release time, and this change may be visible if you have fixtures that are visibly live on stage (i.e. with intensities above zero). To assign the scene's release time:

1. Open + Choose : open the Scene window for the scene on the selected master.
2. Options → Scene : open the Options window and select the Scene pane.
3. Select the Release Time cell:



4. Set **5**, Enter : assign the desired release time.

You can also set a default release time for all newly created scenes in the Scene pane of the User Preferences window:

- Setup → Preferences → Scene

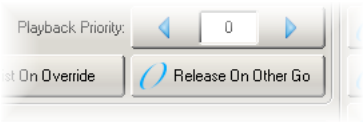
Tip

If you have assigned a release time to a scene, and you want to revert to the default release time, press the Default button adjacent to the Release Time cell.

Releasing on Another Go

When running several cuelists or scenes in a show, you may want a scene to release when another cuelist or scene is triggered. This effectively gives the scene the lowest possible playback priority; for more on playback priority, see *Changing a Scene's Priority (p.297)*. You can set Release on Other Go in the Scene window of each scene window:

1. Open + Choose → Options → Scene
2. Select Release on Other Go:



Alternatively, you can turn on Release on Other Go for all new scenes in the Scene pane of the User Preferences window:

- Setup → Preferences → Scene

25.1.4 Scene Options Toolbar

You can quickly access many scene options from the Scene Options Toolbar by holding down the Choose key of the master the scene is on:

25.2 Running Multiple Scenes

Because Wholehog consoles can simultaneously run ten scenes or cuelists on masters (and more if virtual masters and playback wings are used) the question arises as to which master actually has control over a particular fixture parameter. To decide which master takes precedence Wholehog OS applies the following rules:

- **For intensity parameters:** by default, intensity parameters are controlled on a Latest Takes Precedence (LTP) basis, therefore the value of an intensity parameter that appears in several scenes will be output from the scene with the highest playback priority; see *Changing a Scene's Priority*

(p.297). In addition, you can assign scene options so that a master works on a Highest Takes Precedence (HTP) basis; this means that if several masters have programming for the same intensity parameter, the highest programmed level will be output to stage. For a full discussion of HTP and LTP, see *HTP and LTP (p.11)*.

- **For position, colour and beam parameters:** Wholehog OS deals with position, colour and beam parameters on a Latest Takes Precedence (LTP) basis. If several masters have programming for the same parameter then the value from the most recently activated master will override the value from previously activated masters. Parameters that are only programmed into a single master will remain at that value. When you release the most recently activated master, control will be returned to the previously activated master. Alternatively you can assert a previously activated master's parameters so that they override the most recently activated master; see *Asserting One Scene Over the Others (p.296)*. You can prevent an (LTP) parameter from being overridden by master actions or assertions by giving its scene a high playback priority; see *Changing a Scene's Priority (p.297)*.

Tip

The Programmer, or the current editor with blind mode off, will always have priority over all masters and virtual masters.

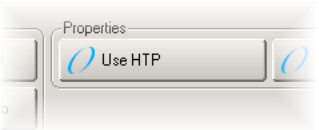
25.2.1 Using HTP and LTP

You can switch a scene's precedence from LTP to HTP, allowing intensity parameters that have programming to be output at their highest level rather than the most recently activated level. For example, when touring with smoke machines you may wish to manually boost the level of smoke by creating a smoke scene with smoke levels higher than those programmed into the main cuelist to combat changes in air conditioning or venue size at specific points in the show.

For a full explanation of LTP, see *HTP and LTP (p.11)*.

To assign a scene's precedence to HTP:

1. Open + Choose → Options → Scene
2. Select Use HTP:



Alternatively, you can turn on Use HTP for all new scenes in the Scene pane of the User Preferences window:

- Setup → Preferences → Scene

25.2.2 Asserting One Scene Over the Others

When you have several scenes or cuelists active at the same time, control of fixture parameters programmed into one scene or cuelist may be taken by another scene or cuelist that also has programming for that fixture parameter. For example assuming both scenes are LTP, if Scene 1 has programming for desk channels 1-3, and Scene 2 has programming for desk channels 3-6, then running a cue in Scene 2 will override the intensity parameter of desk channel 3.

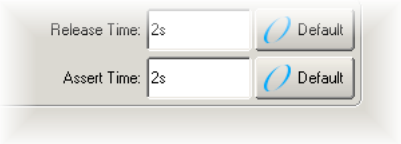
You may want to return control of desk channel 3 to Scene 1 without having to run Scene 1; this is known as asserting Scene 1. Asserting a scene forces all fixture parameters to their programmed value in that scene.

To assert parameters in the scene attached to Master 3, for example, press and hold the Assert key, and press the Choose key for Master 3.

The Assert Time

When you assert a scene, the parameters that have been asserted change to their new values over the assert time. The default is 2 seconds, but you can assign your preferred assert time for each scene:

1. Open + Choose → Options → Scene
2. Select the Assert Time cell:



3. Set **5**, Enter : change the assert time to 5 seconds.

Alternatively, you can assign the Assert Time for all new scenes in the Scene pane of the User Preferences window:

- Setup → Preferences → Scene

Tip

If you have assigned an assert time to a scene, and you want to revert to the default assert time, press the Default button adjacent to the Assert Time cell.

25.2.3 Changing a Scene's Priority

Under the LTP rule, the most recent action determines the value of a fixture parameter; see *Running Multiple Scenes (p.294)*. However, you can override this precedence by assigning scenes different priorities, so that scenes with a higher priority take precedence over those with a lower one. If their priority is equal, then the LTP rule is used to determine which scene will take precedence and determine the parameter's value.

A scene's default priority is 0, and you can assign the priority value in increments of 10. For example, if the priority of the scene on Master 9 is at default (0) and the priority of that on Master 8 is 50, then a Go triggered on Master 9 will not override common parameters currently active on Master 8. Conversely, you can apply a minus priority so if the scene on Master 10 has a priority of -50, common parameters on Master 9 will override those on Master 10.

To change a scene's priority:

1. Open + Choose → Options → Scene
2. Select the Playback Priority cell:

3. Set **50**, Enter : change the priority to 50.

Alternatively, you can assign the Playback Priority for all new scenes in the Scene pane of the User Preferences window:

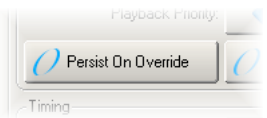
- Setup → Preferences → Scene

Persist on Override

Wholehog OS automatically releases scenes when all of their parameter contents have been overridden by other scenes or cuelists. However, sometimes it is useful to return to a scene's look when overriding cuelists or scenes have been released; in this case you can use Persist on Override. When this option is activated, the overridden scene will not automatically release and will remain active when the overriding scene or cuelist is later released.

To turn Persist on Override on for a scene:

1. Open + Choose → Options → Scene
2. Select Persist on Override:



Alternatively, you can assign Persist on Override for all new scenes in the Scene pane of the User Preferences window:

- Setup → Preferences → Scene

25.2.4 Multiple Scenes with Effects

If a scene has parameters that are running an effect, when another cuelist or scene changes the underlying values of those parameters the effect continues to run. Use Pile-Add FX to allow the cuelist or scene to override the effect as well as the underlying values.

For example, to allow the scene on Master 10 override effects running on Master 9:

1. Open + Choose : open the Scene window for Master 10.
2. Options : open the scene's Scene Options window.
3. Select the Scene pane and select Pile-Add FX.

25.3 Playback with a Virtual Master

You can play back scenes without assigning them to a physical master by using Virtual Masters, run directly from the Scene Directory. Virtual masters are always at full intensity, so the level of fixtures is that recorded in the scene. An almost unlimited number of virtual masters running different scenes can be in operation at any one time.

You can operate scene virtual masters from the Scene Directory window or from the command line.

Tip

You can press Scene + Release to release all running scenes playing back as virtual masters.

25.3.1 Running Virtual Masters from the Scene Directory Window

You can run scene virtual masters from the Scene Directory window:

- Open + Scene

Or:

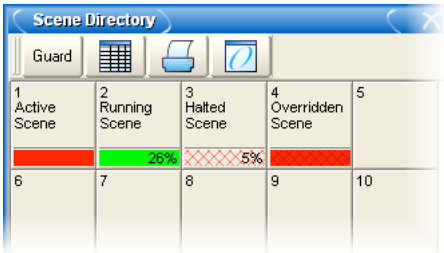
- Scene, Scene

To run a scene, make sure that the Guard button in the Scene Directory window is deselected. Then press a scene button in the directory, and it will playback onstage, as

if Go had been pressed on a physical master. Holding your finger down on the scene's button is the equivalent of holding the master's Choose key, and you can then use the central playback controls.

The scene buttons in the directory are coloured to show the scene status:

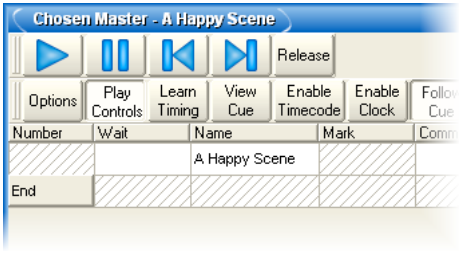
- **Red:** the scene is active on stage.
- **Green:** the scene is running.
- **Red hatched:** the scene is halted.
- **Black hatched:** the scene is overridden.



25.3.2 Running Virtual Masters from the Scene Window

To run a scene virtual master from the Scene window:

1. Open + Scene : open the Scene Directory window.
2. Check that the Guard button is depressed.
3. Open + (Scene 4) : open the required scene.
4. Press the Play Controls button in the Scene window. The on-screen playback controls will appear:



The controls are, from left to right, the Go, Halt/Back, Skip Back, Skip Forward, and Release buttons. These function in the same way as their front panel equivalents; see *The Main Controls (p.265)*. Note that Skip Back and Skip Forward are not used with scenes.

25.3.3 Running Scene Virtual Masters from the Command Line

To run a scene on a virtual master from the command line:

- Scene **1**, Enter : sends a Go command to scene 1.

25.4 Understanding Feedback for Scenes

There are several ways in which you can tell the status of the console's output. This section describes the information shown on the Playback Bar for scenes; the playback control LEDs on the front panel of the console, and the Output window, work in the same way for scenes as for cuelists, and are described in *Understanding Feedback for Cuelists (p.279)*.

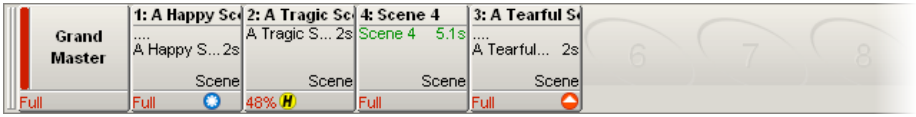


Figure 25.1. The Playback Bar

Above the masters is a status bar on screen giving feedback for each master; see *Figure 25.1, "The Playback Bar"*. For a scene it displays:

- The scene name and time.
- If the scene has been released, then .... is displayed.
- The master level as a percentage. If the master is below 100%, then a red bar appears indicating the level. It is possible for the position of the physical fader to be different to the master level of the scene, in which case the vertical bar will be blue; see *Matching Levels When Changing Page (p.305)*.
- Any options set for the scene. The symbols used are shown below.

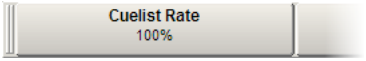
Symbol	Description
H	The scene is working under the **HTP** rule.
P	The scene is set to Persist on Override. See *Changing a Scene's Priority (p.297)*.
R	The scene is set to Release on Other Go. See *Releasing on Another Go (p.294)*.
	The scene has a high priority. See *Changing a Scene's Priority (p.297)*.
	The scene has a low priority. See *Changing a Scene's Priority (p.297)*.
	The scene uses the master as an IPCB fader. See *IPCB Fader Mode (p.301)*.

25.5 Advanced Scene Playback

25.5.1 Overriding Rate During Playback

You can alter the fade rate timings of the currently chosen scene in two ways:

- **With the Rate Wheel:** The centre-sprung wheel on the left of the console allows the fade rate to be momentarily modified to speed up or slow down the fading in of a scene.
- **With the left-hand Parameter Wheel:** When you hold down a Choose key, you can use the left-hand parameter wheel to control the crossfade rate of the selected master. This modified rate will persist until you make another change.



The rate level is displayed as a percentage with a default of 100%. A scene with a fade of 10 seconds will complete in 5 seconds with an accelerated rate of 200%, or in 20 seconds with a decelerated rate of 50%.

25.5.2 IPCB Fader Mode

You can inhibit the output values of any intensity, position, colour or beam parameter information in any other scene or cuelist by using a scene as a IPCB Fader. For example, when touring a rig distances between the stage and the FOH positions may vary, and therefore there maybe instances that you may wish to limit the level of these fixtures in order to maintain a balanced look on stage.

To create an inhibitive master using IPCB fader function:

1. Open the Programmer from the Main Toolbar. In the Programmer select the fixtures and parameters you wish to inhibit, then assign a maximum inhibit level.
2. Record Scene **1** Enter : record the scene.
3. Scene **1** Move Choose : place the scene on a free master.
4. Pig + Choose → Playback Options : open the scene master's options window.
5. In the Master pane, select IPCB Crossfader from the Fader drop down menu.

Once created you can inhibit the value of parameters contained in the IPCB fader scene by adjusting the scene's fader level.

Section 26: Working with Pages

Pages allow you to predefine layouts of cuelists, scenes and inhibitive masters, so that they can be loaded quickly on to the available playback masters.

For a concert, for example, cuelists can be organized in one page per song, so that before each performance it is possible to re-arrange the pages to reflect the current running order of the songs. One cuelist can be used several times within a page or on several pages, or it can be unique to a specific page. A template page can define certain masters to be the same on every page.

Pages can be accessed from the Page Directory:

- Open + Page

Or:

- Page, Page

For general information on working with directories, see *Working with Directories (p.108)*.

26.1 Creating a New Page

Selecting a page that currently does not exist will automatically create a blank page and load it onto the masters. Cuelists, scenes and inhibitive masters can then be assigned to the masters on the newly created page.

To create a new page:

1. Open + Page : opens the Page Directory.
2. Make sure that Guard is not selected in the Page Directory, otherwise you will not be able to create a new page using this method.
3. Press a button in the Page Directory where you want to create the new page. A new, blank page is created.
4. Set **[name]** Enter : name the page.

Or, using the command line:

1. Page **[number]** Enter : a new, blank page is created.
2. Set **[name]** Enter : name the page.

Important

When you create a new, blank page, it is automatically loaded onto the physical playback masters. By default, any cuelists, scenes and inhibitive

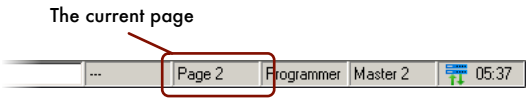
masters that were previously loaded will be released, and their contents will no longer be output from the console. You can change this behaviour; see *Options When Changing Page (p.304)*.

26.2 Changing Page

Changing the page loads a different set of cuelists, scenes and/or inhibitive masters onto the physical playback masters. You can do this in several ways:

- Press the Next Page key to go to the next page in the Page Directory. To go to the previous page hold Pig and press Next Page.
- Using the command line : Page **[number]** Enter.
- Select the desired page from the Page Directory window. Check that the Guard button in the directory window is not selected.
- Use a macro within a cuelist; see *Automating the Console Using Macros (p.329)*.
- Set a trackball key to select the next page; see *Trackball Keys (p.69)*.

The current page is shown in the status area at the right hand end of the Command Line Toolbar:



Tip

You can control which page loads next when you use Next Page to change pages by having the pages in the desired order in the Page Directory. See *Copying and Moving Pages (p.309)*.

26.2.1 Options When Changing Page

When you change page, there are three options for what happens to any cuelists, scenes or inhibitive masters that are still active:

- **Release All:** releases all cuelists, scenes and inhibitive masters on the old page and replaces them with the cuelists on the new page.
- **Hold Over If Active:** keeps active cuelists, scenes and inhibitive masters from the old page on their master, until you release them. They are then replaced with the contents on that master on the new page.

- **Leave In Background:** leaves the old cuelist, scene and/or inhibitive master active in the background, and attaches the new one to the master. To get to the background item, go back to the page that it is on.

Tip

You can think of changing pages using the Leave In Background option as being similar to having one very long page, and moving the masters to 'look' at different sections of it.

A further option, Remember Fader Values, allows a page's fader levels to remain where they were last time the page was loaded. If the physical faders have moved from these values, a blue matching bar will appear; see *Matching Levels When Changing Page (p.305)*.

By default, Release All and Remember Fader Values are selected for new pages, but you can change this in the User Preferences window:

- Setup → Preferences → Misc : see *Figure 26.1, "The Misc pane of the User Preferences window"*.

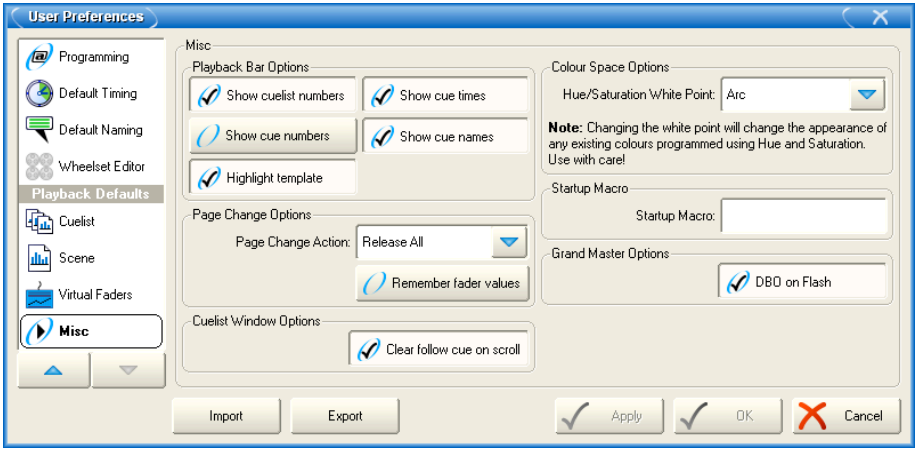


Figure 26.1. The Misc pane of the User Preferences window

If you want to hold over a particular cuelist, scene or inhibitive master when changing page, hold the master's Choose key when changing the page. The item's name in the Playback Bar will have a blue background to indicate it is in holdover mode.

To remove a held over master simply release it and the cuelist, scene or inhibitive master for that master on the new page will replace it (if there is one).

26.2.2 Matching Levels When Changing Page

When you change page using Leave In Background, it is possible for the actual position of the physical master faders to be different to the master level of the cuelist. For example, this will happen if you have the fader at 100% while on Page 1, then go to Page 2 and

reduce the master to 50%, and then go back to Page 1; see *Figure 26.2, "Matching Levels when Changing Page"*.

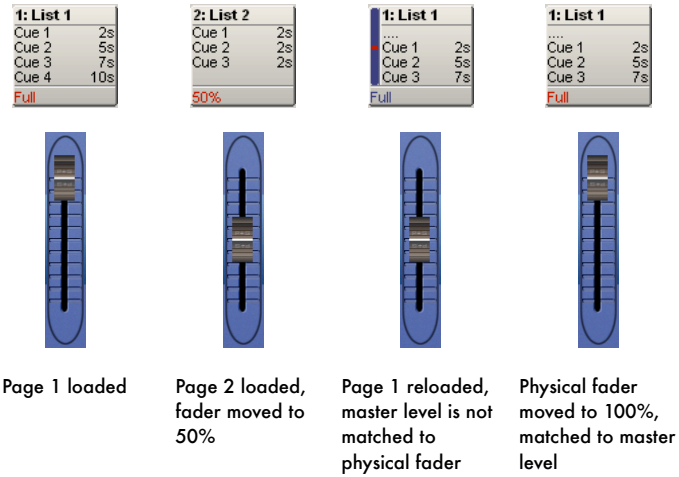


Figure 26.2. Matching Levels when Changing Page

If this happens, the master level of the cuelist will be shown on the Playback Bar in blue, together with a red dot showing the physical fader position. To rematch the levels, move the fader until it is at the same level as the blue bar; at this point the fader will take control of the cuelist master level in the normal way.

26.2.3 Restoring Activity When Changing Pages

You can trigger cues to go and assign masters to specific fader levels when changing page by using Restore Activity. To do this, you capture the desired activities as a macro, which is later executed when the page is loaded.

To capture page activity:

1. Page + Open : open the Page Directory.
2. Go to the desired page, and assign the page activity: you can playback cuelists and scenes, and set fader levels. For example, Master 1 Go, Master 4 at 50%, Master 8 at 25%.
3. Select Capture Activity from the Page Directory to store the activity as a macro for the page.

To directly edit a page's macro:

1. Page + Open : open the Page Directory.
2. Select to change to the spreadsheet view.

3. Select the Macro cell and press the Set key. Type in the macro you require, and press Enter.

For details of the macro syntax, see *Automating the Console Using Macros (p.329)*.

Tip

You can display a list of available macro commands on the console by selecting the Macro cell and pressing the Set key.

To clear the macro:

1. Page + Open : open the Page Directory.
2. Deselect to change to the button view.
3. Right click on the page and select Clear Activity Macros from the contextual menu.

Similarly, you can enable or disable Restore Activity without deleting the macro itself by right clicking on the page and selecting from the contextual menu. A icon will appear as a reminder that Restore Activity is on.

26.3 Modifying Pages

You can copy or move cuelists, scenes and inhibitive masters to a page, or remove them, as well as clearing the whole page. If you change which cuelists, scenes or inhibitive masters are assigned to the current page, then that assignment will automatically be recorded as part of the page. Changes made to cuelists, scenes and inhibitive masters (such as editing their contents) remain with that item, and not with the page.

26.3.1 Copying Cuelists, Scenes and Inhibitive Masters to a Page

Copying a cuelist to a page creates a new cuelist which is independent of the one it is a copy of. Any changes made to this new cuelist will not effect the original cuelist. To copy an existing cuelist to a page:

- List **2** Copy Choose : copies cuelist 2 to the selected master.

You can also copy a cuelist from one master to another:

1. Choose : press the Choose key of the master with the cuelist you want to copy.
2. Copy
3. Choose : press the Choose key of the master you want to copy the cuelist to.

You can copy scenes and inhibitive masters in the same way.

26.3.2 Moving Cuelists, Scenes and Inhibitive Masters to a Page

Moving a cuelist to a page does not create a new cuelist, so changes made to the cuelist will affect all other uses of that cuelist on other pages. To move an existing cuelist to a page:

- List **2** Move Choose : moves cuelist 2 to the selected master.

You can also move a cuelist from one master to another:

1. Choose + Move : press the Choose key of the master with the cuelist you want to move.
2. Choose : press the Choose key of the master you want to move the cuelist to.

You can move scenes and inhibitive masters in the same way.

26.3.3 Removing Cuelists, Scenes and Inhibitive Masters from a Page

To remove a cuelist, scene or inhibitive master from a page:

- Delete + Choose

Note that this will only remove the item from the master; the item will not itself be deleted from the show.

26.3.4 Clearing Cuelists, Scenes and Inhibitive Masters from a Page

To clear all cuelists, scenes and inhibitive masters from the current page:

1. Open + Page : opens the Page Directory window.
2. Press Clear Current Page in the Page Directory.

Note that clearing the current page will remove items from the masters; the items themselves will not be deleted from the show.

Important

When you clear the current page, any cuelists, scenes and inhibitive masters that were previously loaded onto the physical masters will be released, and their contents will no longer be output from the console.

26.4 Copying and Moving Pages

You can copy and move pages:

1. Open + Page : open the Page Directory.
2. Make sure that the Guard button is selected, otherwise pressing a directory button will activate the page, rather than just selecting it.
3. (Page 1) Copy (Page 3) : copies Page 1 to Page 3.

Similarly, using the command line:

- Page **2** Move Page **4**,Enter : moves Page 2 to Page 4.

Tip

The order of the pages in the directory determines which page you get when changing pages using the Next Page key. You can copy and move your pages so that they appear in the correct order for your show. You can then go through the performance using Next Page rather than selecting from the directory.

26.5 Deleting Pages

To delete a page:

1. Page **1** Delete
2. Click OK to confirm the delete.

You can delete a range of pages:

1. Page **1** Thru **4** Delete
2. Click OK to confirm the delete.

Note that you cannot delete the current page. Deleting a page does not delete cuelists or scenes from the show.

Tip

If you prefer not to be asked to confirm the delete action, select Don't Ask Me Again in the confirmation window. You can reenable the confirmation by going to Setup → Preferences → Programming and selecting Confirm before deleting directory items.

26.6 The Template Page

The template page specifies which cuelists will appear on specific masters for *every* page without physically having to load them onto the same masters on all pages. For example, you could have a primary cuelist containing the commonly used cues of the show, which you want available on the same master, regardless of which page you are on. When you move this cuelist to a master on the Template page, it will then appear on the same master of all pages. If a normal page and a template page have a cuelist on the same master, the normal page's cuelist will override the template page's cuelist.

To make a page into the template page:

1. Open + Page : opens the Page Directory window.
2. Right-click on the page, and select Set As Template Page from the menu.

To turn off the template page, right-click on the template page and select Clear Template Page from the menu. There can only be one template page; assigning a new template page will restore the previous one to a normal page. The template page is shown by a T symbol in the directory window.

Since the template page typically does not relate to a specific portion of your production (a song for example), template pages are never loaded from the Next Page key. When cycling through pages with this key, the template page will be skipped. You can always directly load the template page using either the page directory or the command line.

Cuelists, scenes and inhibitive masters that appear on a master of a page because they originate from the template page are shown in blue on the Playback Bar by default; see *Figure 26.3, "The Playback Bar with Master 10 loaded from the Template Page"*. You can turn this off in Setup → Preferences → Misc by deselecting Highlight Template.

Figure 26.3. The Playback Bar with Master 10 loaded from the Template Page

If the template page is the current page, the entire Playback Bar, including empty masters, are also shown in blue; see *Figure 26.4, "The Playback Bar with the Template Page loaded"*.

Figure 26.4. The Playback Bar with the Template Page loaded

Section 27: Working with Playback Controls

27.1 Grand Master

The Grand Master inhibits the intensities of all fixtures on the console, including those within the Programmer, with the exception of those that are parked. By default, it resides on Master 1 on each page of masters, but you can load a cuelist, scene or inhibitive master onto Master 1 in the same way as with any master; see *Working with Pages (p.303)*.

The Flash key below the Grand Master fader acts as a non-latching blackout key. Pressing it will temporarily reduce all fixture intensities in the output to 0%, with the exception of any intensity parameters that have been parked; see *Parking (p.207)*. When you release the key, fixture intensities are restored to their normal values.

You can also control the Grand Master using the GM key. Hold down the GM key and turn the first parameter wheel or the I-Wheel. This allows you to access the Grand Master quickly when a normal master on the current page is obscuring it. The GM key LED shows the state of the Grand Master:

- **Off:** Grand Master is at 100%.
- **On:** Grand Master is at 0%.
- **Slow flashing:** Grand Master is between 0 and 100%.

27.1.1 Matching the Grand Master Level

If you use the GM key to change the Grand Master level, it is possible for the position of the physical fader to be different to the Grand Master level. If this happens, the Grand Master level will be shown on the Playback Bar in blue, with a red dot showing the level of the physical fader. To rematch the levels, move the fader until it is at the same level as the blue bar; at this point the fader will take control of the Grand Master level in the normal way.

For an explanation of matching fader levels, see *Matching Levels When Changing Page (p.305)*.

27.1.2 The Blackout Key

The Flash Key below the Grand Master acts as a blackout button. You can disable this function:

1. Setup → Preferences → Misc
2. Under Grand Master Options, deselect DBO on Flash.

27.2 Inhibitive Masters

Inhibitive masters allow you to limit the intensity of a group of fixtures. If the inhibitive master is at full, then the fixtures that it controls will be at the level determined by the playbacks, Programmer, and so on. As the inhibitive master level is reduced, the fixture intensities will be reduced in proportion. For example, if you have four fixtures at 0%, 50%, 80% and 100% in a cue that is being output, and these fixtures are also in an inhibitive master, then the levels will change as follows:

Fixture:	1	2	3	4
Master at 100%	0	50	80	100
Master at 50%	0	25	40	50
Master at 0%	0	0	0	0

Pressing the Flash key of an inhibitive master is the same as momentarily changing its fader level to 0%, taking all fixture intensities controlled by the inhibitive master to 0%. Intensity values are restored when you release the key.

To create an inhibitive master:

1. Record a group containing the required fixtures. See *Recording a Group (p.181)*.
2. Group, Group : open the Group Directory.
3. Select the required group. To ensure you don't select the group in the Programmer or editor, enable the Guard button in the Group Directory, or press and hold the Pig key while selecting the group.
4. Move, Choose : move the group to the required master.

Or, using the command line:

1. Record a group containing the required fixtures.
2. Group **[group number]** Move Choose

The Playback Bar will show the group name above the chosen master. When the master level is less than 100%, the Playback Bar will also display a bar showing the level. When the Flash key is pressed, the Playback Bar will display BO; see *Figure 27.1, "The display of Inhibitive Masters on the Playback Bar"*.

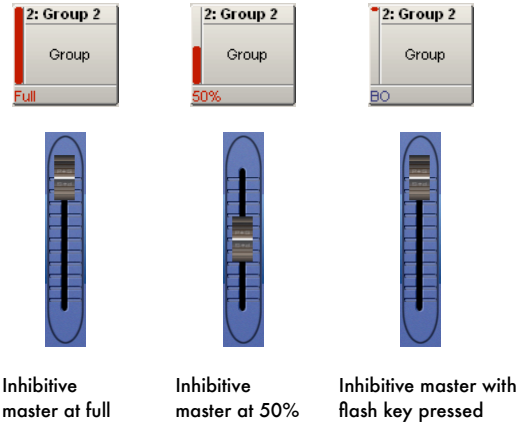


Figure 27.1. The display of Inhibitive Masters on the Playback Bar

27.3 Configuring Playback Controls

For each cuelist and scene you can configure how the playback controls work. For example you can:

- Assign the master Go key to assert the selected cuelist over 3 seconds.
- Assign the main Halt/Back key to Halt the selected cuelist with the option to 'Release if already halted'.
- Assign the Fader to be a manual crossfader rather than an intensity fader.
- Assign the Flash key to only flash to 50% and to Go the cuelist.

To assign the function of each control, together with any associated options:

1. Open + Choose : open the Cuelist window.
2. Options : open the Options for the cuelist.
3. Under Controls, select the Master or Main Controls pane; see *Figure 27.2, "The Master pane of the Cuelist Options window"* and *Figure 27.3, "The Main Controls pane of the Cuelist Options window"*.
4. Select the action you want controls to have from the corresponding drop-down list, together with any options.
5. Press OK when you have finished.

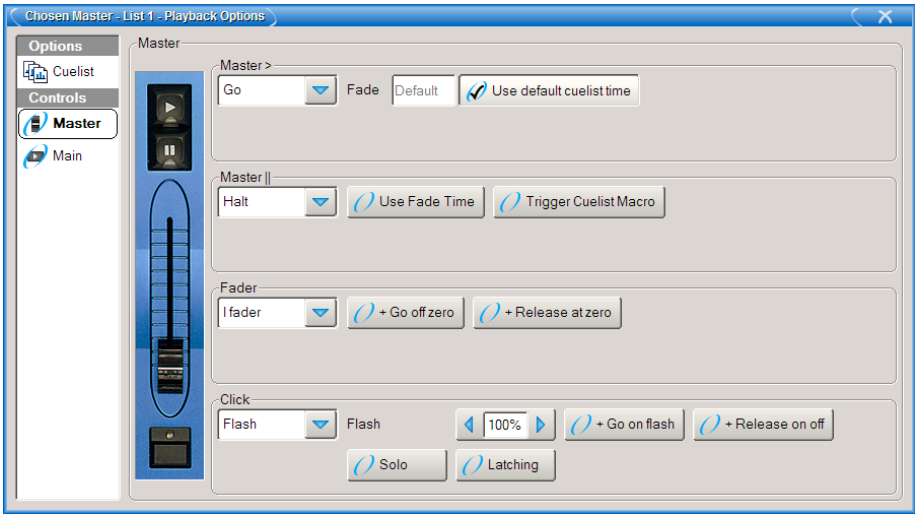


Figure 27.2. The Master pane of the Cuelist Options window

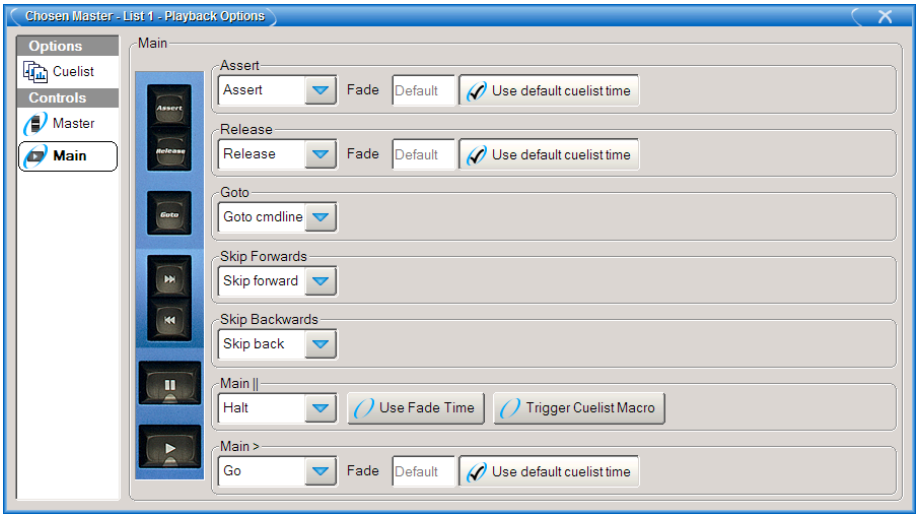


Figure 27.3. The Main Controls pane of the Cuelist Options window

27.3.1 Configuring Master Controls

When you configure master controls, these settings are part of the cuelist and will be applied to the master that the cuelist is on. The configuration options for the master controls are shown in the following tables:

The Master Go and Master Halt keys	
Function	*Options and Notes*
None	Disables the control
Assert	Asserts the master. Deselect Use default cuelist time to enter your own assert time for the master, overriding the cuelist's assert time.
Release	Releases the master. Deselect Use default cuelist time to enter your own release time for the master, overriding the cuelist's release time.
Go	Go's the master. Deselect Use default cuelist time to enter your own fade time for the master, overriding the cuelist's time.
Halt	Halts the master, stopping any fades that are in progress. Select Use Fade Time to use the previous cue's fade time when going backwards instead of the cuelist's Back Time. Select Trigger Cuelist Macro to trigger the previous cue's macro when going backwards.
Back	Reverses the currently running crossfade. Deselect Use default cuelist time to enter your own back time for the master, overriding the cuelist's back time.
Restart	Goes to the first cue in the cuelist.
Goto cmdline	Enters the Goto command into the command line, so that you can enter a cue number and press Enter to go to that cue.
Goto	Enter a cue number to go to in the Target Cue cell. Deselect Use default cuelist time to enter your own fade time, overriding the cue's time.
Skip forward	Go instantly to the next cue.
Skip back	Go instantly to the previous cue.

The Fader	
Function	*Options and Notes*
None	Disables the control
I Fader	The fader controls fixture intensities being output by the master. Press Go Off Zero to Go the next cue when the fader is moved above zero. Press Release At Zero to release the master when the fader is moved down to zero.
Manual crossfader	The fader control cues manually: move the fader to the bottom to 'pick up' the next cue, then move it up to start the crossfade.

The Flash key	
Function	*Options and Notes*
None	Disables the control
Flash	The Flash key brings the fixture intensities currently controlled by the master to their full level, determined by the cuelist or scene on the master. This is equivalent to momentarily bringing the fader to full. You can enter a percentage level for the Flash function. If this is less than 100%, fixture intensities will be reduced in proportion when the Flash key is pressed. Press Go On Flash to go the master when the Flash key is pressed. Press Release on Off to release the master when the Flash key is released. Press Solo to have the intensity outputs of all other masters taken to zero when the Flash key is pressed. If you select Latching, the action of the Flash key is maintained until it is pressed a second time.

27.3.2 Configuring the Main Controls

When you configure the main playback controls, the settings are part of the cuelist and will be applied whenever you select the Choose key for the master that the cuelist is on. The configuration options for the main control keys are shown in the following table:

The Assert, Release, Goto, Skip Forwards, Skip Backwards, Main Halt and Main Go keys	
Function	*Options and Notes*
None	Disables the control
Assert	Asserts the chosen master. Deselect Use default cuelist time to enter your own assert time, overriding the cuelist's assert time.
Release	Releases the chosen master. Deselect Use default cuelist time to enter your own release time, overriding the cuelist's release time.
Go	Go's the chosen master. Deselect Use default cuelist time to enter your own fade time, overriding the cuelist's time.
Halt	Halts the chosen master, stopping any fades that are in progress.
Back	Reverses the currently running crossfade on the chosen master. Deselect Use default cuelist time to enter your own back time, overriding the cuelist's back time.
Restart	Goes to the first cue in the cuelist on the chosen master.
Goto cmdline	Enters the Goto command into the command line, so that you can enter a cue number and press Enter to go to that cue on the chosen master.
Goto	Enter a cue number to go to in the Target Cue cell. Deselect Use default cuelist time to enter your own fade time, overriding the cue's time.
Skip forward	Go instantly to the next cue on the chosen master.
Skip back	Go instantly to the previous cue on the chosen master.

Section 28: Working with Audio, MIDI and Timecode

The Wholehog III console allows you to input and output audio signals, including playing audio from the built-in CD drive. With the Wholehog III, Hog iPC and Hog 3PC you can also trigger cues from MIDI Show Control (MSC) and send MSC data out, and you can bring timecode into the console and trigger cues from it, and output it at another point on the network. Wholehog OS supports MIDI timecode, Linear Timecode (LTC), and Video Timecode (VITC).

To use MIDI with Hog 3PC you will need a MIDI interface connected to your PC.

28.1 Working with Sound

The Wholehog III supports several sound inputs and outputs, all controlled from the Sound panel of the Control Panel; see *Figure 28.1, "The Sound panel of the Control Panel"*. To open the Control Panel:

- Setup → Control Panel

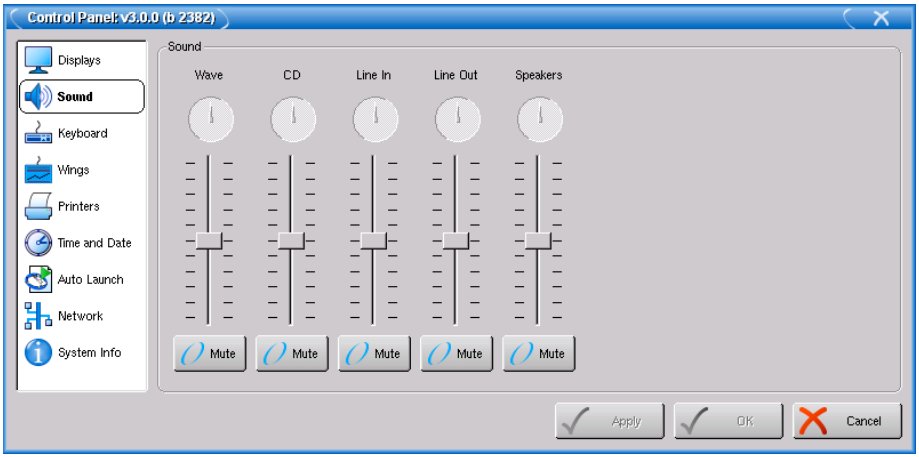


Figure 28.1. The Sound panel of the Control Panel

In the Sound panel you can set a volume level, pan between left and right, and mute each on the console's inputs and outputs:

- **Wave:** console sounds such as beeps.
- **CD:** the built-in CD drive.
- **Line In:** the 3.5mm stereo mini-jack line input on the console's rear panel.

- **Line Out:** the 3.5mm stereo mini-jack line output on the console's rear panel.
- **Speakers:** the console's built-in speakers.

All inputs are sent to all outputs, subject to the levels assigned in the Control Panel.

28.1.1 Playing Sound from the CD-ROM Drive

You can control sound playback from the console's built in CD-ROM drive using the on-screen controls located on the CD Control Toolbar; see *Figure 28.2, "The CD Control Toolbar"*.

Figure 28.2. The CD Control Toolbar

To open the CD Control Toolbar:

- Open + CD Tools : the CD Tools button appears on the toolbar at the bottom of the right hand screen when you press the Open key.

The CD Control Toolbar displays track time information, and has controls for:

- Play
- Pause
- Stop
- Skip Backwards
- Skip Forwards
- A drop down list of tracks
- Playing/Paused : the current time on the track
- Remain : the time remaining on the track
- Track : the total time of the track
- A slider that represents the current location within the track. You can adjust the play or pause location by moving the slider.

You can use macros to control the CD-ROM drive when you launch a show, change page, or play a cue or scene; see *Automating the Console Using Macros (p.329)*.

You can also use the CD-ROM drive as a source for timecode; see *Using a CD (p.323)*.

28.2 Working With MIDI Show Control

You can use MIDI Show Control (MSC) to control the Wholehog III, Hog iPC and Hog 3PC. MIDI Show Control is a technology that allows you to control all the elements of a performance (lighting, sound, video, pyrotechnics, effects, and so on) from a single controller. It uses a variation of the well-established **MIDI** standard to send cuing information between the show controller and the controllers specific to each performance element. You can use the Wholehog console as the lighting controller in an MSC show control system, receiving commands from a show controller; you can also use the console as a show controller, sending MSC commands to other controllers.

For more information on MSC, see *www.midi.org*. In addition, John Huntington's definitive book *Control Systems for Live Entertainment* contains technical information, guidance on show control system design, and case studies of show control in use.

28.2.1 Bringing MSC into a Wholehog Console

To bring MSC into a Wholehog III, Hog iPC or Hog 3PC console:

1. Connect an MSC controller to a MIDI input on either the console or a MIDI/Timecode Processor networked with the console.
2. Setup → Network : open the Network window.
3. Select the console or MIDI/Timecode Processor in the list.
4. Settings : open the Settings window; see *Figure 28.3, "The MIDI pane of the Console Settings window"*.
5. In the MIDI pane, turn on MSC by clicking on the checkbox.
6. Select a Device ID.
7. Select a Format ID.

Tip

You can enable incoming MSC commands for individual cuelists using the cuelist's options; see *Using MIDI Show Control (p.320)*.

28.2.2 Sending MSC from a Wholehog Console

To send MSC from a Wholehog III, Hog iPC or Hog 3PC console:

1. Connect an MSC device to a MIDI output on either the console or a MIDI/Timecode Processor networked with the console.
2. Setup → Network : open the Network window.
3. Select the console or MIDI/Timecode Processor in the list.
4. Settings : open the Settings window.

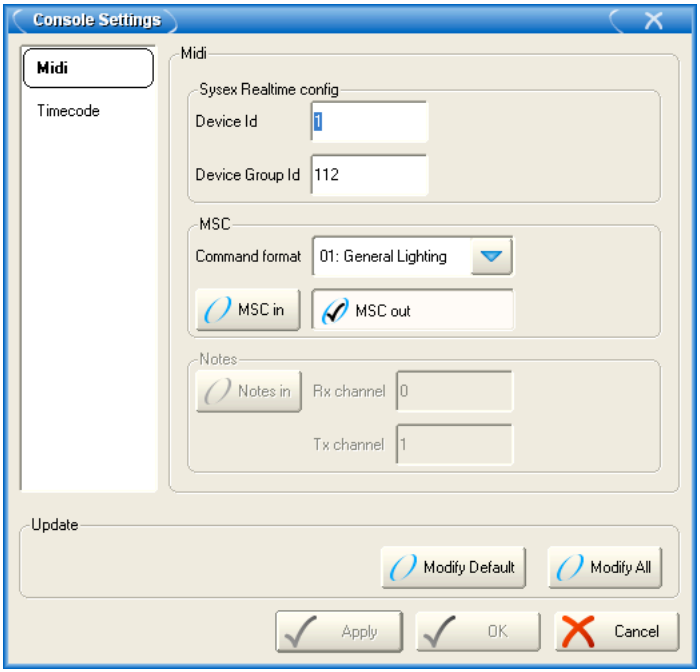


Figure 28.3. The MIDI pane of the Console Settings window

5. In the MIDI pane, turn on MSC Out.

Tip

You can enable MSC out for individual cuelists using the cuelist's options; see *Using MIDI Show Control (p.320)*.

28.2.3 Using MIDI Show Control

Wholehog OS recognises and sends the following MSC commands:

Wholehog OS Command	MSC Command	MSC Data
Go	0x1 GO	cue number, cuelist number
Halt	0x2 STOP	cuelist number
Resume	0x3 RESUME	cuelist number
Skip Forward	0x4 TIMED_GO	time=0, cue number, cuelist number
Skip Back	0x4 TIMED_GO	time=0, cue number, cuelist number
Release	0xb GO_OFF	cuelist number
Change Page	0x1d OPEN_CUE_PATH	page number

MIDI show control is enabled by default for all cuelists and scenes. You can assign a cuelist or scene to ignore incoming MIDI show control commands:

1. Open + Choose → Options → Cuelist
2. Select Ignore MSC In.

Similarly you can prevent the MIDI show control commands for a cuelist being sent out from the console:

1. Open + Choose → Options → Cuelist
2. Select Suppress MSC Out.

Tip

MSC doesn't distinguish between cues and scenes as Wholehog OS does, so there are no MSC commands to control scenes. To work round this, you can send an MSC command with a CUE_PATH value of 5. Wholehog OS will treat the cue number as a scene number instead.

28.2.4 Tracking Backup Using MIDI Show Control

One important application for MIDI show control is to 'slave' one console to another as a tracking backup:

1. Load the show file onto both consoles.
2. Connect the MIDI out of the master console to the MIDI in of the slave console.
3. Turn on MSC Out on the master console; see *Sending MSC from a Wholehog Console (p.319)*.
4. Turn on MSC In on the slave console; see *Bringing MSC into a Wholehog Console (p.319)*.

When you play cues and scenes on the master console, they will now also play on the slave console.

28.3 Working with MIDI Syntax

You can send MIDI syntax from Wholehog III, Hog iPC and Hog 3PC consoles, or from a networked MIDI/Timecode Processor, using macros when you launch a show, change page, or play a cue or scene. See *Automating the Console Using Macros (p.329)*.

28.4 Bringing Timecode into the Console

You can bring timecode into the console in several ways:

Timecode Type	Input Using:
MIDI Timecode	The MIDI input on the console.
	The MIDI input on a MIDI/Timecode Processor on the network.
Linear Timecode	A Linear Timecode USB Widget connected to the console's USB port.
	The LTC input on a MIDI/Timecode Processor on the network.
	An audio CD in the console's CD-ROM drive.
Video Timecode	The VITC input on a MIDI/Timecode Processor on the network.

Timecode brought into a console or MIDI/Timecode Processor is automatically distributed over the network and can be used by any other console or taken out of a MIDI/Timecode Processor's MIDI, LTC or VITC outputs.

Tip

You can have multiple timecodes running over the network at once. However, MIDI/Timecode Processors can only have one active timecode source at a time.

28.4.1 Connecting a Timecode Input

Connecting To a MIDI/Timecode Processor

To connect a timecode source to a MIDI/Timecode Processor:

1. Connect the MIDI/Timecode Processor to the network. You will need to use an ethernet switch; see *Setting Up the Network (p.75)*.
2. Connect the timecode source to the MIDI/Timecode Processor's MIDI, LTC or VITC input as appropriate.
3. Setup → Network : open the Network window.
4. Select the MIDI/Timecode Processor in the list.
5. Settings : open the Settings window.
6. In the Timecode pane, select the input source, and any required options; see *Timecode Input Options (p.324)*.

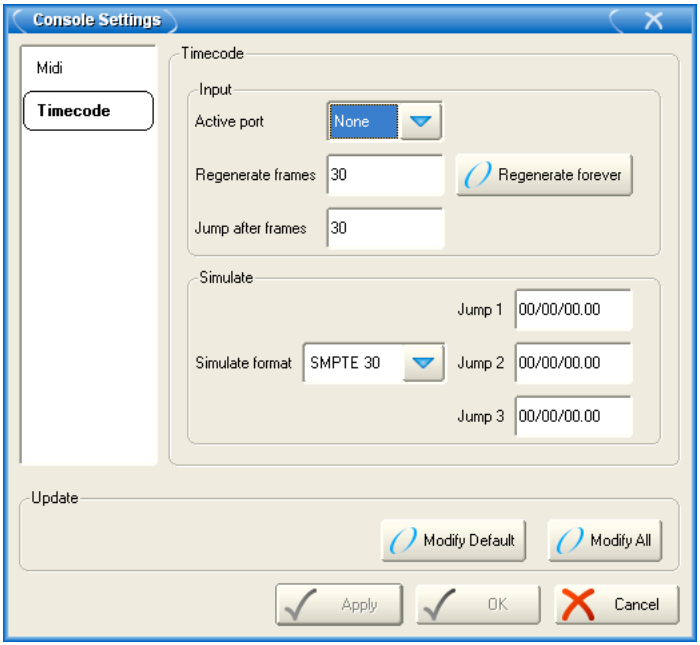


Figure 28.4. The Timecode pane of the Console Settings window

Connecting To a Console

To connect a timecode source to the console:

1. If you are using MIDI Timecode, connect the source to the console's MIDI In port on the rear panel.
2. If you are using Linear Timecode:
   a. Connect the Linear Timecode USB Widget to the console's USB port.
   b. Connect the timecode source to the Widget's input. This is a standard audio 3-pin XLR connection.
3. Setup → Network : open the Network window.
4. Select the console in the list.
5. Settings : open the Settings window.
6. In the Timecode pane, select the input and any required options; see *Timecode Input Options (p.324)*.

Using a CD

Wholehog OS can use the elapsed time of an audio CD as a timecode source:

1. Place the audio CD in the console's CD-ROM drive.
2. Setup → Network : open the Network window.
3. Select the console in the list.
4. Settings : open the Settings window.
5. In the Timecode pane, select CD as the input and assign any required options; see *Timecode Input Options (p.324)*.

The CD will send its elapsed time just like any other timecode source when it is played using the CD controls; see *Playing Sound from the CD-ROM Drive (p.318)*. Note that the CD audio will come out the console speakers and audio output port, according to the settings in the Sound pane of the Control Panel; see *Working with Sound (p.317)*.

28.4.2 Timecode Input Options

You can assign various options for timecode input in the Timecode, LTC and VITC panes of the Settings window. The general options for timecode input are:

Setting	Default	Notes
Active Port	None	The active timecode input for the console or MIDI/Timecode Processor. These are: None, LTC, MIDI, CD (console only), VITC (MIDI/Timecode Processor only).
Regenerate Frames	30	If the timecode input stops, the console or MIDI/Timecode Processor will regenerate the timecode for this number of frames. Use this to protect against brief interruptions to the timecode signal.
Regenerate Forever	Off	The timecode will be regenerated indefinitely.

The options for Linear Timecode are:

Setting	Default	Notes
Output Gain	0dB	The gain to be applied to an LTC signal when it is output.

The options for Video Timecode are:

Setting	Default	Notes
Input Format	PAL	PAL or NTSC format.
Readline1	10	The video line where the timecode to be read is encoded.
Writeline1	10	The video line where the timecode to be written is encoded.
Burn In Window: Visible	Off	Show the timecode value in the video image that is being output.
Line	20	The vertical position of the timecode in the video image.
Column	40	The horizontal position of the timecode in the video image.

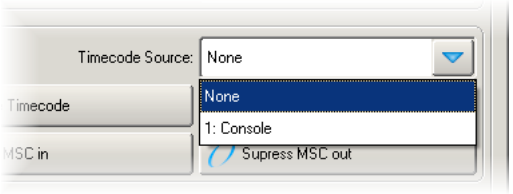
Tip

You can configure a MIDI/Timecode Processor using its own display and controls, rather than from a console using the Network window. All the settings are available in Main → IO Config. For general information on working with MIDI/Timecode Processors, see *Working with Network Processors (p.83)*.

28.5 Triggering Cues from Timecode

You can select a timecode source for each cuelist, and then give timecode values to cues within the list to determine when they should be triggered. To select a source:

1. Open → Choose : open the Cuelist window.
2. Options → Cuelist : go to the Cuelist pane of the Playback Options window.
3. Select a timecode source from the drop down list:



4. Ensure that the Enable Timecode button is selected.

Tip

There is an Enable Timecode button in the Cuelist window, so you can easily enable and disable timecode during programming and playback without having to open the Playback Options window each time.

To trigger a cue from timecode:

1. Open → Choose : open the Cuelist window.
2. Select the Wait cell for the cue, and press Set.
3. From the toolbar, select Timecode.
4. Enter a timecode value in hours, minutes, seconds and frames, in the form **hh/mm/ss.ff**, then press Enter.

As well as entering timecode values manually, you can use Wholehog OS's learn timing function to quickly associate timecode values with cues; see *Learn Timing (p.237)*.

By default, cuelists will follow the incoming timecode, even if the timecode skips forwards or backwards; generally, this is a useful behaviour as, for example, you might 'rewind' the timecode during rehearsals to repeat a part of the show, and the cuelist will automatically go to the correct cue. Sometimes you may want to prevent a cuelist going backwards if the timecode goes backwards. You can do this using Trigger Forwards Only:

1. Open + Choose → Options → Cuelist
2. Select Trigger Forwards Only.

28.5.1 Editing Timecode Values

To change the timecode value used to trigger a cue:

1. Open → Choose : open the Cuelist window.
2. Select the Wait cell for the cue, and press Set.
3. From the toolbar, select Timecode.
4. Enter a timecode value in hours, minutes, seconds and frames, in the form **hh/mm/ss.ff**, then press Enter.

You may need to change the timecode value for one cue, and then change the timecode values for subsequent cues by the same amount, to keep the same relative timings. For example, you might have a series of cues where each one is triggered by timecode one second after the previous one. If the timecode value triggering the first cue needs to be increased by 12 frames, you may want the values for all the subsequent cues to also be increased by 12 frames to maintain the 1 second separation. Wholehog OS allows you to do this easily:

1. Open → Choose : open the Cuelist window.

2. Click and drag to select the Wait cells for the range of cues you want to edit.
3. Press Set.
4. Edit the timecode value of the first cell then press Enter. All the selected timecode values will be adjusted by the same amount of time added or subtracted from the first value.

28.6 Viewing Timecode

You can view the timecode generated by any source in a Timecode Toolbar:

1. Setup → Network : open the Network window.
2. Select a network node, such as a console or a MIDI/Timecode Processor.
3. Press Timecode Toolbar. The Timecode Toolbar will open; see *Figure 28.5, "The Timecode Toolbar"*.

If you have a cuelist with a timecode source selected, you can also open the Timecode Toolbar with the View Timecode button in the Cuelist window.

The Timecode Toolbar displays the Input timecode value (that physically arriving at the node) and the Current value. The Current value is the same as the input value when a real input port is selected, or the simulated value when in simulation mode; see *Simulating Timecode (p.327)*. The Current value is the one that is presented to the rest of the network.

Figure 28.5. The Timecode Toolbar

28.7 Simulating Timecode

You can temporarily simulate a timecode source, perhaps because the actual source is not available during programming. Timecode simulation is controlled from the Timecode Toolbar:

1. Open → Choose : open any Cuelist window.
2. Press View Timecode to open the Timecode Toolbar.
3. Press Simulate to show the timecode simulation controls.

To set up timecode simulation:

1. Configure → Timecode : open the Timecode pane of the Console Settings window.

   Or:

   Press the Configure button on the Timecode Toolbar.

2. Select a timecode format to simulate from the list: SMPTE 30, NTSC 30, EBU 25, Film 24.
3. If required, assign up to three Jump points. These are timecode values that you can jump straight to from buttons on the Timecode Toolbar.
4. Press Close to finish.

You can control timecode simulation from the Timecode Toolbar with the Go, Stop, and three Jump buttons.

Section 29: Automating the Console Using Macros

You can use macros to automate tasks on the console. Tasks that can be automated include:

- Going, Halting, Asserting, Releasing and Fading Masters.
- Going, Halting, Asserting and Releasing Cuelists.
- Going, Halting, Asserting and Releasing Scenes.

You can have a macro run at these times:

- When a show is launched; see *Startup Macros (p.120)*.
- When a page is loaded; see *Restoring Activity When Changing Pages (p.306)*.
- When a cue or scene plays; see *Triggering Automatic Tasks When a Cue Runs (p.289)*.

29.1 Macro Commands

Macros are text commands that you type or place into a macro cell; the syntax used is the same in each case:

Controlling Masters			
Macro	*Syntax*	*Example*	*Comments*
Go Master	**GM[master]/[cue]**	**GM1/3**	Use '*' for the current chosen master. If you omit the cue number, the next cue will Go.
Go Master	**GM[range]**	**GM2>7**	Go next cue on a range of masters.
Halt Master	**HM[master or range]**	**HM1,3:HM2>7**	
Assert Master	**AM[master or range]**	**AM1:AM2>7**	
Release Master	**RM[master or range]**	**RM1:RM2>7**	
Release All	**RA**	**RA**	Equivalent to Pig + Release.
Release Others	**RO**	**RO**	Releases all masters except the one with the macro.
Fade Master	**FM[master]/[level]**	**FM2/50**	Fades Master 2 to 50%.
Choose Master	**CM[master]**	**CM1**	

Controlling Cuelists

Macro	*Syntax*	*Example*	*Comments*
Go Cuelist	**GL[list]/[cue]**	**GL1.5, GL2/5**	If you omit the cue number, the next cue will Go.
Halt Cuelist	**HL[list]**	**HL1,6**	
Assert Cuelist	**AL[list]**	**AL10**	
Release Cuelist	**RL[list]**	**RL4,7,9**	
Enable Clock	**EC[list]**	**EC5**	Enables clock triggering in the list.
Disable Clock	**DC[list]**	**DC5**	Disables clock triggering in the list.

Controlling Scenes

Macro	*Syntax*	*Example*	*Comments*
Go Scene	**GS[scene]**	**GS12**	
Halt Scene	**HS[scene]**	**HS4**	
Assert Scene	**AS[scene]**	**AS1**	
Release Scene	**RS[scene]**	**RS6,20**	

Controlling Pages and Views

Macro	*Syntax*	*Example*	*Comments*
Change Page	**CP[page]**	**CP3**	
Next Page	**CP+**	**CP+**	Goes to the next page in the Page Directory, skipping the template page and blank pages.
Previous Page	**CP-**	**CP-**	Goes to the previous page in the Page Directory, skipping the template page and blank pages.
Recall View	**RV[view]**	**RV2**	

Controlling the CD-ROM drive

Macro	*Syntax*	*Example*	*Comments*
Go CD	**GCD[track]**	**GCD3**	Plays the console's build in CD player. You can specify a track number, otherwise the CD will unpause if paused, or play from the start of the CD.
Halt CD	**HCD**	**HCD**	Pauses the CD if playing, unpauses if paused, or starts the CD but pauses it immediately.
Release CD	**RCD**	**RCD**	Stops the CD.
Next CD Track	**NCD**	**NCD**	
Previous CD Track	**PCD**	**PCD**	

Controlling Timecode			
Macro	*Syntax*	*Example*	*Comments*
Enable Time-code	**ET[cuelist]**	**ET2**	Enables timecode for the selected cuelist.
Disable Time-code	**DT[cuelist]**	**DT2**	
Open Timecode Toolbar	**OT**	**OT**	

Sending MIDI strings		
Macro	*Syntax*	*Example*
MIDI String	**MS[node number]/[MIDI message]**	**MSh1/90473F**
The node number is 'h' for a console, 'i' for a MIDI/Timecode Processor, and its net number. The MIDI message is in Hex.		

Controlling Network Devices			
Macro	*Syntax*	*Example*	*Comments*
Reset Node	**[device type][net number]**	**RNH3**	Resets the selected network device, such as a DMX Processor. For the device type, use the following letter codes: H for WholeHog, D for DMX Processor and I for MIDI/Timecode Processor.

Tip

You can display and select from a list of available macro commands on the console by selecting the Macro cell and pressing the Set key.

29.2 Entering Macro Commands

To enter a macro command into a macro cell:

1. Select the macro cell, and press Set.
2. Select a command from the drop down menu.
3. Enter the specific information for the macro, such as the master number.
4. Press Enter to finish or select another macro and repeat. If you add a further macro command, the ':' will be entered automatically.

Alternatively:

1. Select the macro cell, and press Set.
2. Enter the macro command manually using the keyboard.

3. Press Enter to finish.

Note that if you enter an invalid command, then the cell will revert to being empty when you press Enter.

29.3 Additional Macro Syntax

Within a macro command, you can specify multiple targets separated with commas:

RS6,20

or a range with a right angle-bracket:

HM2>7

You can have multiple macros executed by one cue by separating them with colons:

HM1,3:HM2>7

You can also send commands to a specified network device, using **H** (Hog) to refer to a console, **D** to refer to a DMX Processor, and **IOP** to refer to an MIDI/Timecode Processor. For example:

GM1H2 : will Go master 1 on console number 2.

RND3 : will reset DMX Processor number 3.

Section 30: The Hog 3PC Software

30.1 Installation

30.1.1 Unpacking

If you ordered a USB DMX Widget or DMX Super Widget, you should have received:

- USB DMX widget or Super Widget (Super Widget requires power and a power supply is included)
- USB cable
- Hog 3PC software installation CD

If you ordered a USB Wing, you should have received:

- USB playback or programming wing
- Protective cover for the wing
- USB cable
- Power supply unit with IEC power cable
- LED desklight with protective pouch

If you ordered an LTC Widget, you should have received:

- USB LTC widget
- USB cable

30.1.2 System Requirements

To ensure successful operation of the Hog 3PC software on a personal computer, verify that your system meets the following minimum specifications:

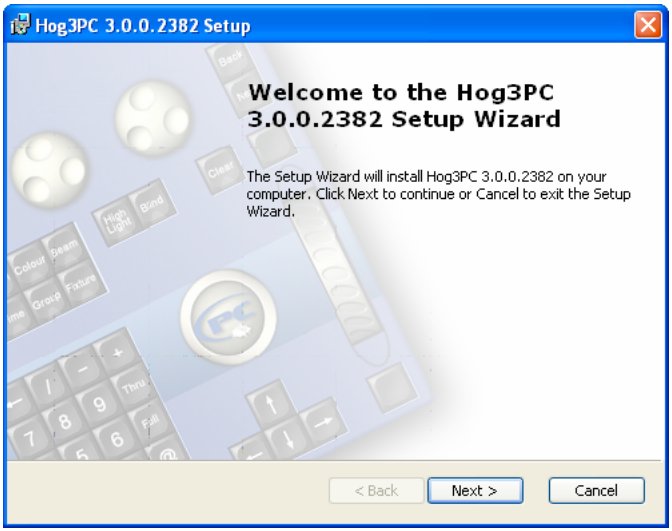
- Pentium III compatible processor at 1GHz or higher
- Microsoft Windows XP® (Home or Professional) operating system (service pack 2 or greater), or Windows Vista®.
- 256MB of RAM
- 200MB of free hard-disk space
- 1024×768 or higher-resolution monitor

For larger shows, using a more powerful processor is advisable. Please ensure that you are using the most up-to-date drivers for your graphics card.

30.1.3 Installing the Hog 3PC Application

The software for the Hog 3PC system is provided on the accompanying CD-ROM. You can also download the latest version of the application from the Flying Pig Systems website at *www.flyingpig.com*. To install the software:

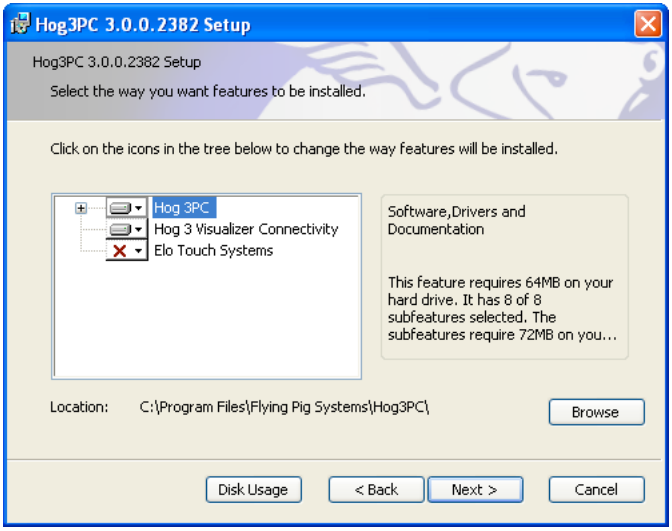
1. After loading the CD, double click on the Hog3PC_x-x-x-x.msi file to launch the install wizard, where x-x-x-x is the supplied build number. The Hog 3PC installer will check your operating system and windows installer versions, and then display the welcome screen.


Hog3PC 3.0.0.2382 Setup
Welcome to the Hog3PC 3.0.0.2382 Setup Wizard
The Setup Wizard will install Hog3PC 3.0.0.2382 on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
< Back
Next >
Cancel

2. Ensure any Flying Pig Systems USB devices (such as widgets or wings) have been disconnected from your computer, and click on the Next button to continue.
3. The wizard displays an End User License Agreement. After you select I accept the terms in the License Agreement, you can click the Next button to continue.

Hog3PC 3.0.0.2382 License Agreement
End-User License Agreement
Please read the following license agreement carefully
End User License Agreement
High End Systems Hog3PC™, Hog iPC™, Hog2PC™, Road Hog™ & Full Boar™ End User License Agreement
SERVER & DESKTOP USE ONLY
THIS SOFTWARE END USER LICENSE AGREEMENT ("EULA") IS A LEGAL AGREEMENT BETWEEN HES AND YOU AS AN INDIVIDUAL AND/OR, IF PURCHASED OR OTHERWISE ACQUIRED BY OR FOR AN ENTITY, AN ENTITY. PLEASE READ IT CAREFULLY BEFORE
I accept the terms in the License Agreement
I do not accept the terms in the License Agreement
< Back
Next >
Cancel

4. You can now choose which features of Hog 3PC you wish to install. The listed options will vary depending on which components are already installed on your machine. Select your preferences and click on Next to continue.

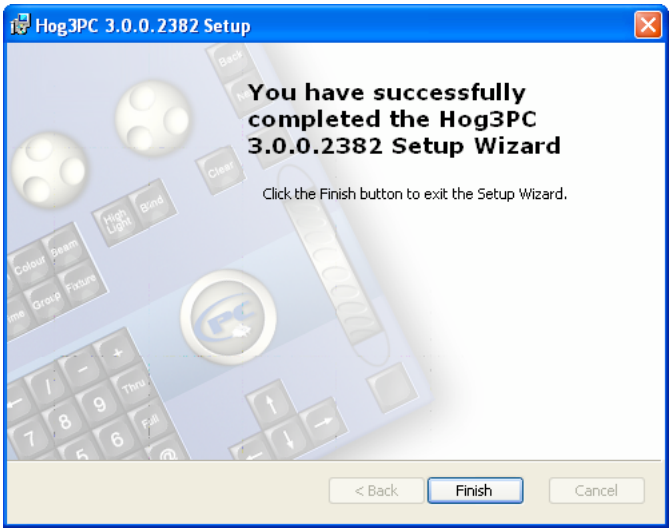

Hog3PC 3.0.0.2382 Setup
Hog3PC 3.0.0.2382 Setup
Select the way you want features to be installed.
Click on the icons in the tree below to change the way features will be installed.
Hog 3PC
Hog 3 Visualizer Connectivity
Elo Touch Systems
Software,Drivers and Documentation
This feature requires 64MB on your hard drive. It has 8 of 8 subfeatures selected. The subfeatures require 72MB on you...
Location:
C:\Program Files\Flying Pig Systems\Hog3PC\
Browse
Disk Usage
< Back
Next >
Cancel

5. By default the software will be installed into the 'C:\Program Files\Flying Pig Systems\Hog3PC\' directory. You can use the Browse button to navigate to another location for the application.

6. After selecting a drive location and components to install, click on Next to continue installation.
7. This prompts a Ready to Install screen with instructions on beginning or cancelling the installation. Click Install to begin installing.
8. When the installation has finished a final screen confirms that the application has successfully installed. Click Finish. You will then be prompted to restart your computer.

Important

It is important that you restart your computer at this point to ensure proper loopback adapter and device driver configuration.


Hog3PC 3.0.0.2382 Setup
You have successfully completed the Hog3PC 3.0.0.2382 Setup Wizard
Click the Finish button to exit the Setup Wizard.
< Back
Finish
Cancel

A Hog 3PC group will be added to the Programs folder on your Start Menu, with icons to start the Hog 3PC application and view installed documentation. A shortcut to the Hog 3PC application will also appear on your desktop.

In addition to the Hog 3PC application, the Hog 3PC group contains the Hog 3PC Widget Upgrader and this User Manual.

The Hog 3PC CD also contains installers for the Wholehog Visualizer Connectivity application and Wholehog 3 console installation software.

30.1.4 Software Removal

You can remove the Hog 3PC application from your computer using the Add/Remove Programs utility found in the Windows Control Panel:

1. In the Windows Start menu, select Control Panel, then double click on Add/Remove Programs.
2. Select 'Hog 3PC' in the list of installed programs, and click Change/Remove.
3. Select Remove, click Next and follow the on-screen instructions to complete the un-installation of Hog 3PC software.

30.1.5 Hardware Installation

Hardware installation should only be performed after the Hog 3PC software has been installed on your computer. Please observe the following important information before connecting your hardware:

USB DMX Widget

As high-power USB devices, DMX Widgets are incompatible with bus-powered USB hubs. If a widget is connected via a bus-powered USB hub, Windows will report that is does not have enough power available to run the widget. Always connect the widget either directly to your computer, or to a self-powered hub.

Tip

The Super Widget comes with its own power supply, so you can connect it to a bus-powered USB hub.

USB LTC Widget

The LTC Widget is a low-power USB device, and so can be used with both bus powered and self powered USB hubs.

USB Super Widget

The USB Super Widget is a self powered device and requires use of the included power supply. It can be used with both bus powered and self powered USB hubs.

USB Wings

The USB Programming and Playback Wings can be used either with or without the supplied external power supplies. If used without, the desklight and internal USB hub will not function, and LED dimming will be unavailable. All other functions will remain unaffected. The USB Expansion wing is self powered and requires external power.

When the internal hub is active (with an external power supply connected), it operates as a self powered hub. It is therefore possible to connect high-power USB devices to the internal hub, such as the USB DMX Widget, or another Wing.

USB Wings are high-power USB devices when used without an external power supply, and so should not be connected to bus powered USB hubs unless the external power supply is connected.

Use the supplied cables to connect any Flying Pig Systems USB devices to your computer. Windows should automatically detect and install the new hardware. This process may take a few seconds, but should not require any input from you. If this is the case, you may ignore the following section on troubleshooting.

30.1.6 Troubleshooting Hardware Installation

- If you see the following dialog, you may safely ignore the warning and click on Next or Finish to complete the installation.

Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
DMX512 Widget
The software for this device is now installed, but may not work correctly.
Click Finish to close the wizard.
< Back
Finish
Cancel

- If Windows displays the full 'new hardware' wizard (not just the dialog above), it has not detected the FPS USB drivers. If this happens, disconnect the USB device, un-install the Hog 3PC software and re-run the installer, verifying that the 'USB Device Drivers' option is checked during the installation process. Then reconnect the USB device.
- If the new hardware wizard is still displayed, select 'Search for a suitable driver for my device'. On the following screen, ensure 'Specify a location' is checked and click on the Next button. This will display a dialog requesting the location of the drivers. You should enter 'C:\Windows\Inf', where 'C:\Windows' is the location where Windows is installed (usually as above, or 'C:\Winnt'). Windows should now detect the drivers and complete the hardware installation.

30.1.7 Computer Configuration

Hog 3PC requires Windows XP SP2 or greater to ensure proper networking functionality. Since the Wholehog 3 Operating System makes use of multiple processes communicating via TCP/IP sockets, some Windows computer configurations may prevent the Hog 3PC processes from communicating with each other.

Not meeting the system requirements of Windows XP SP2 or greater, lack of an enabled network connection or multiple active network connections, and/or firewall settings can all result in Hog 3PC communication failures. These communication failures typically cause the Splash Screen to repeatedly display 'Scanning port 6600' in its status window. If any of the above conditions prevent the use of Hog 3PC, check the following settings:

Network Adaptor

Check the configured network adapter in the Network pane of the Control Panel. Ensure that the correct network adapter is enabled; see *Console Network Adapters (p.75)*.

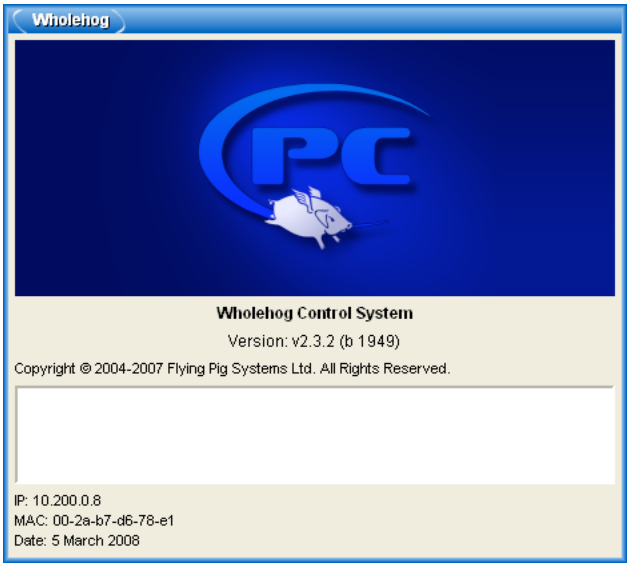
Firewall

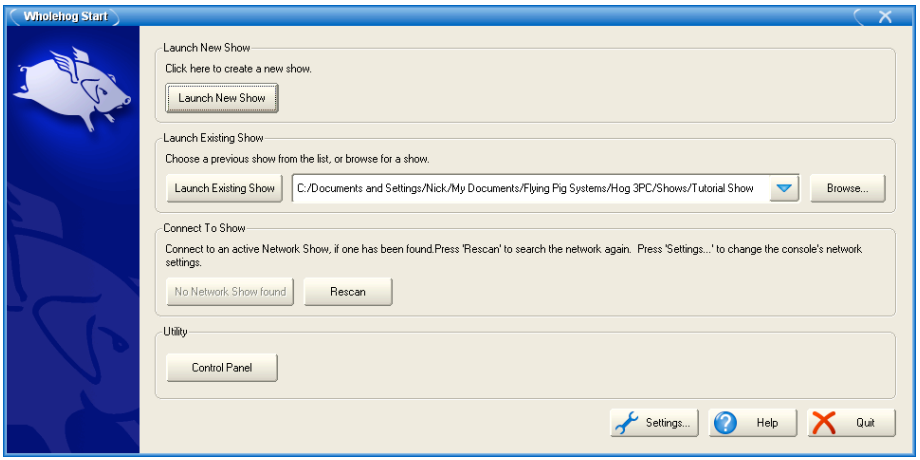
When running the Windows XP firewall or aftermarket firewall products, the firewall may block TCP/IP communications. Often, you can add exceptions for the individual Hog 3PC processes, or add exceptions for traffic that has a source IP address and destination IP address that are both pointing to the local machine. Refer to the documentation provided with your firewall for further details.

30.2 Operation

30.2.1 Starting the Hog 3PC Application

To start the application, click on the Hog 3PC icon on your Windows Start Menu. The Splash Screen and the Start window will open. In the Start window, you can choose to Launch New Show, Launch Existing Show, or Connect to Show.

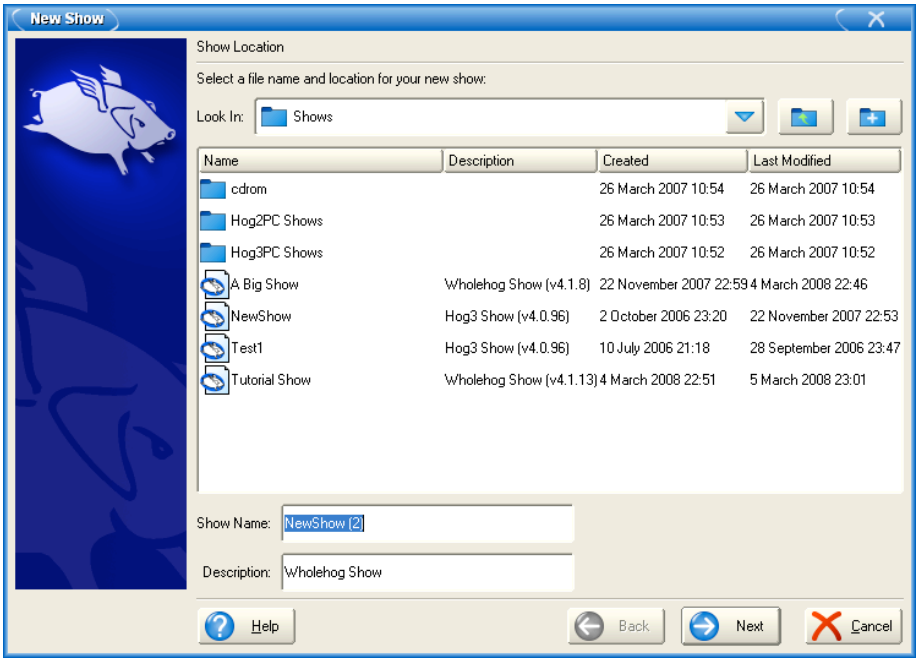



Wholehog Start
Launch New Show
Click here to create a new show.
Launch New Show
Launch Existing Show
Choose a previous show from the list, or browse for a show.
Launch Existing Show
C:/Documents and Settings/Nick/My Documents/Flying Pig Systems/Hog 3PC/Shows/Tutorial Show
Browse...
Connect To Show
Connect to an active Network Show, if one has been found.Press 'Rescan' to search the network again. Press 'Settings...' to change the console's network settings.
No Network Show found
Rescan
Utility
Control Panel
Settings...
Help
Quit

Launching an existing show and connecting to an already running show works the same way on Hog 3PC as on Wholehog consoles; see *Launch Existing Show (p.118)* and *Connect to Show (p.118)* respectively. Launching a new show is slightly different on Hog 3PC, as follows:

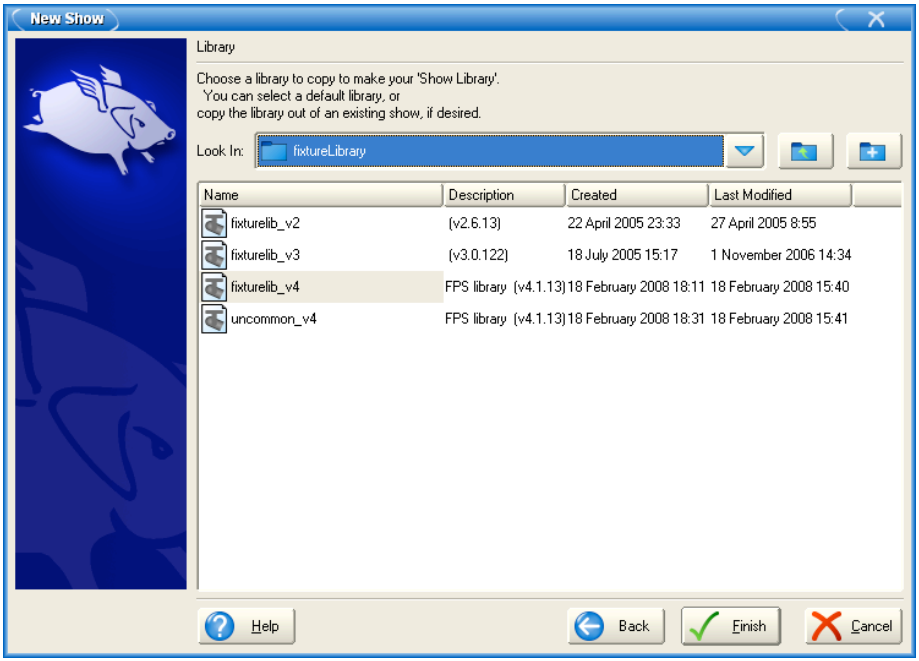
Launching a New Show

Selecting Launch New Show will open the New Show window:



Enter the following information:

- **A storage location:** Choose the location on the hard drive where you would like to store the show. The default location is: C:\Documents and Settings*user_name*\My Documents\Flying Pig Systems\Hog 3PC\Shows.
- **The show name:** Enter a name for the show file. This can be as long as you like.
- **A fixture library:** Choose the library to use as the fixture library. The library contains information about different types of fixtures that the Hog 3PC software needs. Several library versions are available for compatibility reasons - it is best always to select the newest library when starting a new show.



Click Finish to create and launch the new show.

30.2.2 Quitting the Hog 3PC Application

To quit the application:

1. Right click on the Hog 3PC front panel or any screen to display the right click menu, and Select Quit.

   Or:

   Setup → Quit : then Quit button is on the Main Toolbar.

2. In the dialog box, select Quit to exit from Hog 3PC, or Log Off to exit the current show and return to the Start window where you can select another show to load.

Tip

Your show data is stored in the location that you selected when creating the show file. Since Hog 3PC saves changes to the disk as they are made there is no prompt to save the show prior to quitting.

30.2.3 Working with Hog 3PC Show Files

Creating

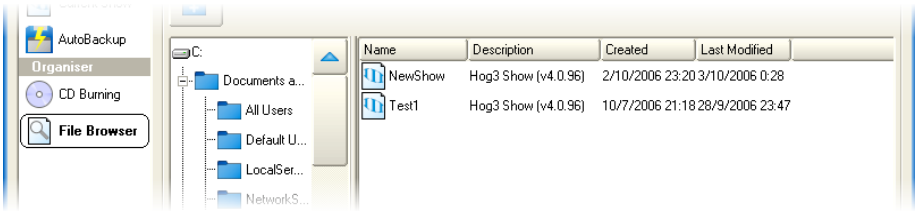
By default, all Hog 3PC shows are stored in sub folders at the following location: C:\Documents and Settings\user_name\My Documents\Flying Pig Systems\Hog 3PC\Shows. You can, however, choose to store show files in any location on your computer when creating a new show file.

Important

Altering or changing the hierarchy or data of any of the files within a Show file folder will corrupt the show file and may make it unusable.

Transfering

A Wholehog show file is actually a folder containing several subfolders and files. Within the Hog 3PC application, this show folder is displayed as a single Wholehog show file with a Wholehog icon:



When browsing the show folders outside of Hog 3PC, you will be able to access the subfolders and files that make up your show.

Important

Altering or changing the hierarchy or data of any of the files within a Show file folder will corrupt the show file and may make it unusable.

Show folders can not be loaded directly into Wholehog III, Hog iPC or Road Hog consoles; backup files must be used. When transferring show files between systems do not copy show the folders using Windows applications. Instead, use the Wholehog OS backup utility and then transfer the backup file to a console or other Hog 3PC system via CD-ROM or external drives; see *Backing Up (p.343)* below.

Backing Up

To prevent problems when transferring a Wholehog show file from Hog 3PC to another Wholehog system, always create a backup of the show file using Wholehog OS backup procedure. This backup procedure creates a single compressed file that contains all the subfolders and files integral to your Wholehog show file.

To create a backup of your show file, within Wholehog OS, use the File Browser pane of the Show Manager window to store a backup of your current show to another location on the hard disk or an external drive:

1. Setup → Shows → Current Show
2. Click Backup.
3. Browse to a location on the hard drive or an external drive to save the backup file.
4. Click OK. A copy of your show will be saved with '_bckf' appended to its file name.

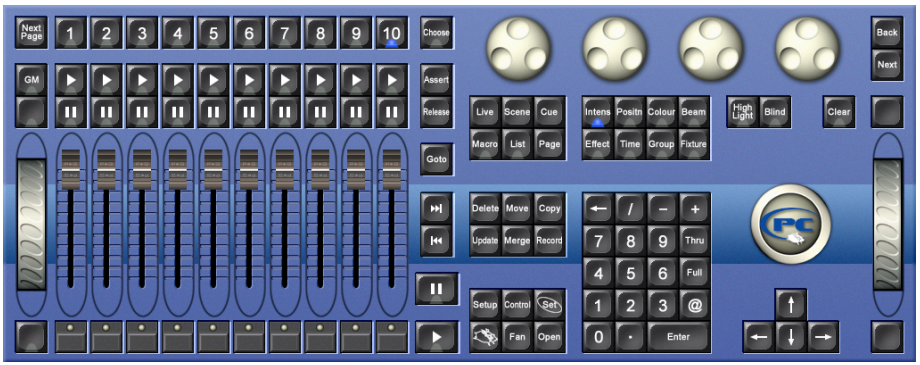
The backup file can also be burned to CD or copied to an external drive and transferred to another Wholehog system with no concerns about corruption of the show file. The backup file is also useful should you need to send a show file via email.

30.2.4 Using the Hog 3PC Interface

Hog 3PC Windows

When Hog 3PC opens the Start window will be displayed along with the splash screen. Once a show file is loaded or opened, the two Hog 3PC default screens will be displayed. You can resize and position these screens the same as any standard Windows operating system screens. To resize, simply place your mouse cursor around an edge or corner to display a resize icon. Click and drag to resize the window. To move, click and drag on the window's title bar (at the top of each window).

The Front Panel Interface



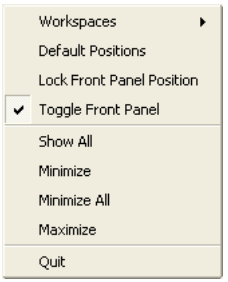
The front panel of Hog 3PC looks and behaves the same as a Wholehog III console. Click on buttons to simulate pressing keys on the console. You can also click and drag to alter the various encoders or faders. In addition, when you click and drag on the trackball, it will illuminate blue and your mouse will adjust the pan and tilt of the selected fixtures.

To hold down a single key and make another selection, simply press and hold Shift on your computer keyboard when you click the key. As long as you are holding shift, this key (and subsequent keys) will remain held down. You can then click on another key, button, cell, or encoder to access further functions.

Right Click Menu

When right clicking in most portions of the Hog 3PC application, the following options are displayed:

- **Workspaces:** opens a sub-selection allowing various portions of the front panel to be displayed.
- **Default Positions:** restores all Hog 3PC screens to their default location on the Windows desktop.
- **Lock Front Panel Position:** toggles the ability to move the Hog 3PC Front Panel on the Windows desktop.
- **Toggle Front Panel:** toggles the Front Panel on/off.
- **Show All:** restores all Hog 3PC screens to their previous size.
- **Minimize:** minimizes the current Hog 3PC screen.
- **Minimize All:** minimizes all Hog 3PC screens.
- **Maximize:** maximizes the current Hog 3PC screen and hides the title bar.
- **Quit:** displays the exit dialog for the Hog 3PC application.



Displaying Four Hog 3PC Windows

By default, only two Hog 3PC windows are shown. However, the Hog 3PC software supports the display of three or four windows if desired. To open these windows:

1. Setup → Control Panel → Displays : open the Displays pane of the Control Panel; see *Figure 30.1, "The Displays pane of the Control Panel"*.
2. Set the resolutions for External Monitor 1 and External Monitor 2 (which correspond to the two external displays on the Wholehog III console).
3. Select OK.

Note that the control panel settings are system specific, so the number of screens will be retained regardless of the show file that is launched.

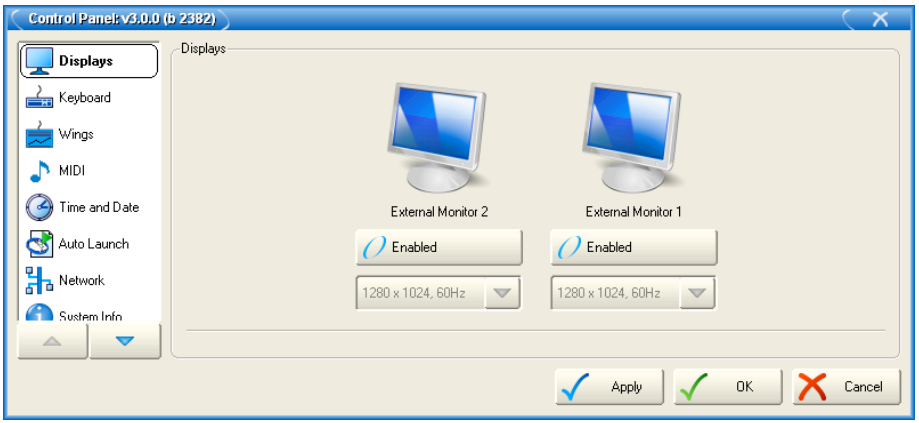


Figure 30.1. The Displays pane of the Control Panel

30.3 Configuration

30.3.1 USB DMX Widgets and Super Widgets

The Hog 3PC software can support up to eight universes of DMX output via USB devices. You can connect any combination of USB DMX Super Widgets or USB DMX Widgets to total 8 DMX outputs. In addition, an unlimited number of DMX outputs is possible when using Wholehog DMX Processors.

When using the internal DMX outputs or external USB DMX Widgets or Super Widgets, instead of the Wholehog III console's direct Ethernet connection to DMX Processors, the Hog 3PC software uses a 'virtual' DMX Processor 8000 when patching and DMX output is then accomplished via external USB DMX Widgets or Super Widgets. Each output of a USB Widget or Super Widget can be mapped to an output of the DMX Processor using the Settings tab of the DMX Processor 8000 in the Network window. External DMX Processors should be mapped starting at DMX Processor #2. See *Patching Fixtures (p.138)* for details on patching fixtures to DMX Processors for DMX output.

When you connect a USB DMX Widget or Super Widget to a USB port of the computer, the Wholehog OS will automatically configure it to the next available output of the virtual DMX Processor 8000. The Link indicator on the widget should be illuminated and it will blink every 2 seconds to indicate that it is functioning correctly.

To manually configure Widgets:

1. Setup → Network : open the Network window.

2. Select the DMX Processor 8000 in the list by clicking on its Network Number, and press the Settings button to open the DMX Processor Settings window. See *Figure 30.2, "The Widget Outputs pane of the DMX Processor Settings window"*
3. Select the Widget Outputs pane.
4. The Hog 3PC application provides one port for each of the DMX outputs on the DMX Processor in the show file. To configure a widget to an output port of a DMX Processor, click on the box associated with the port and select the widget from the list of serial numbers that appears. Super Widget ports will appear with the serial number followed by an output number.
5. Click Apply or OK to confirm the selection. The widgets that have been connected should now have their Active, DMX OK and TX Mode indicators illuminated.

A single widget or single output of a Super Widget may only be connected to one port at any one time. If a widget that is already connected to one port is connected to a second port, it will automatically be disconnected from the first port.

Some widget serial numbers will appear with red text. This indicates that the USB DMX Widget is not compatible with Hog 3PC and must be upgraded; see *Upgrading USB DMX Widgets (p.349)*.

Tip

You can identify which widget is connected to the port by selecting the Beacon button to the right of the port. The widget connected to that port will flash its indicator lights for a few seconds.

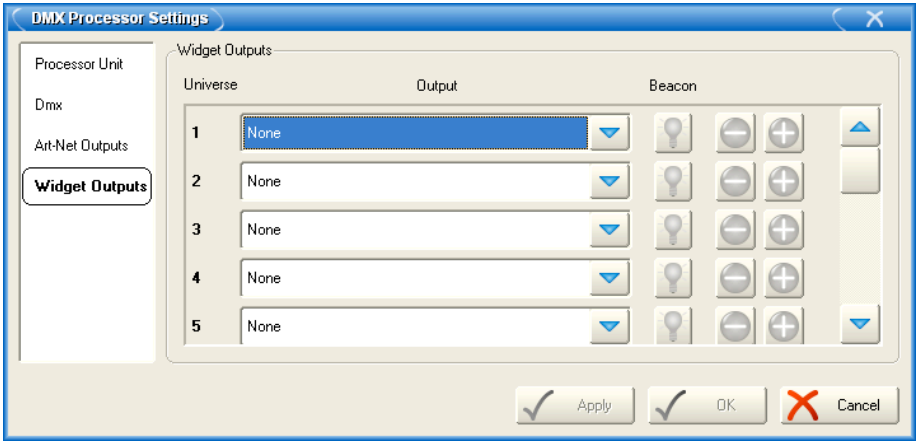


Figure 30.2. The Widget Outputs pane of the DMX Processor Settings window

30.3.2 USB Playback and Expansion Wings

You can connect multiple USB Playback and Expansion Wings to the Hog 3PC computer. For information on configuring wings, see *Adding Playback Wings (p.93)*.

30.3.3 USB Programmer Wing

No configuration is required for a USB Programmer wing. Once connected, it should begin to mimic the programming functions of a Wholehog console.

30.3.4 Virtual Faders

You can define the default setting for a playback bar's faders when no associated hardware is connected in the Virtual Faders tab of the User Preferences window; see *Figure 30.3, "The Virtual Faders pane of the User Preferences window"*. This setting allows you to define the virtual faders as up or down, and is associated with the current show file. The setting does not alter the position of the Grand Master, which is always considered to be up until changed by the user.

When hardware is connected, these settings will be disabled and ignored.

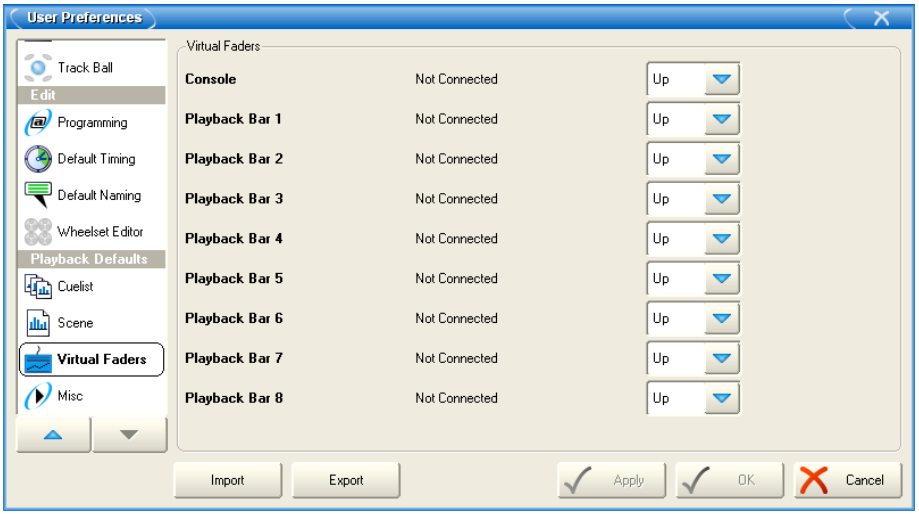
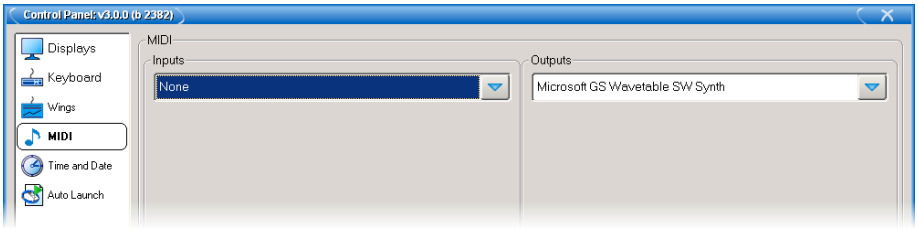


Figure 30.3. The Virtual Faders pane of the User Preferences window

30.3.5 MIDI Configuration

You can configure MIDI Input and Output devices for use with Hog 3PC in the MIDI tab of the Control Panel. First, install your Windows MIDI input/output device and associated Windows drivers following the manufacturer's instructions. Once the hardware is properly configured in Windows, it should become available in the drop down menus of the Control Panel:



30.4 Visualiser Support

You can visualise Hog 3PC output using a supported visualiser (such as ESP Vision or WYSIWYG) running on the same computer. You will need the Wholehog Connectivity application installed; it is installed automatically with the Hog 3PC application unless it is deselected using the Custom Setup option. For installation and use of the Wholehog Connectivity Application, see *Visualiser Connectivity (p.367)*.

Tip

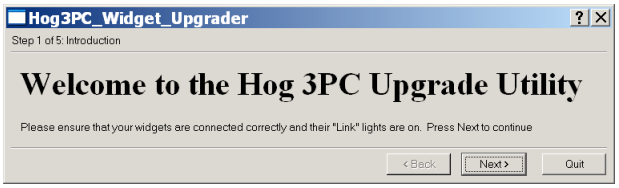
When Hog 3PC software is interfaced directly to a visualiser running on the same computer, your computer may be less responsive than when running Hog 3PC software alone. This is normal, as both programs must share the computer's resources.

30.5 Upgrading USB DMX Widgets

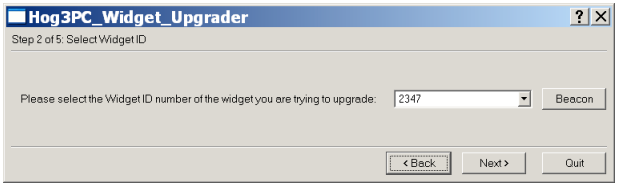
Many USB DMX Widgets (single universe) are compatible only with Hog 2PC. These USB DMX widgets will need to be upgraded to be compatible with Hog 3PC. Please contact your High End Systems dealer for pricing and details. When purchasing, you need to provide your Widget serial number and Widget ID number. Once the upgrade is purchased, you will receive an Upgrade Kit for each USB DMX Widget. This kit contains labeling, hardware, software, and a unique authorization code compatible only with the specified widget serial number.

After receiving your upgrade kit, follow these steps to upgrade your USB DMX Widget:

1. Install Hog 3PC from the included CD-ROM.
2. Connect your USB DMX Widget(s) that match the serial numbers on the included authorization sheet.
3. In Windows, launch the Hog 3PC Widget Upgrader application from the Hog 3PC start menu.

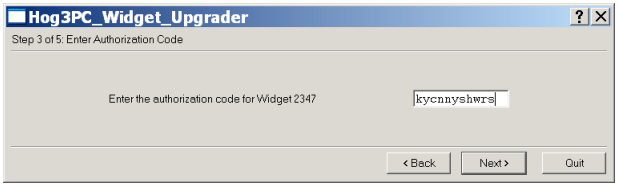

Hog3PC_Widget_Upgrader
Step 1 of 5: Introduction
Welcome to the Hog 3PC Upgrade Utility
Please ensure that your widgets are connected correctly and their "Link" lights are on. Press Next to continue
< Back
Next >
Quit

4. After confirming that the widget(s) are properly connected and the Link LED is illuminated, press Next.
5. Select a Widget ID number to upgrade from the drop down menu. To confirm the selected widget, press the Beacon button to flash the LEDs on the widget.


Hog3PC_Widget_Upgrader
Step 2 of 5: Select Widget ID
Please select the Widget ID number of the widget you are trying to upgrade:
2347
Beacon
< Back
Next >
Quit

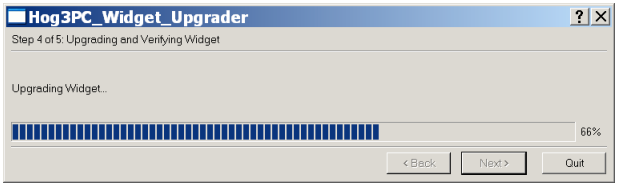
If the drop down menu displays 'No DMX Widgets found!', check your USB connections. Press Next to continue to the next step.

6. Enter the authorization code for the selected widget, and press Next. The authorization code will be delivered with the Hog 3PC Widget Upgrade Kit.

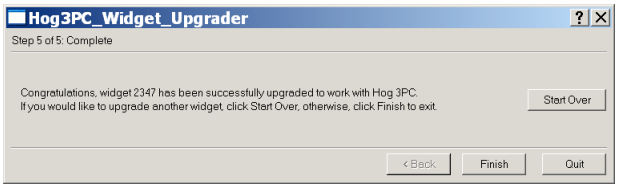


If the code is incorrect an error message will be displayed. Click OK to close the error and re-enter the proper authorization code. Codes are unique for each USB DMX Widget and will not function unless they match the expected serial number and Widget ID number.

7. The upgrade process will take a few seconds to complete.



8. Once complete, the widget will be fully upgraded. You can now select Start Over to upgrade another widget, or press Finish or Quit to exit the application. In the event of an error, a message will be displayed. Please contact High End Systems support for further assistance; see *Reporting Problems (p.413)*.


Hog3PC_Widget_Upgrader
Step 5 of 5: Complete
Congratulations, widget 2347 has been successfully upgraded to work with Hog 3PC.
If you would like to upgrade another widget, click Start Over, otherwise, click Finish to exit.
Start Over
< Back
Finish
Quit

Section 31: The Hog iPC Console

31.1 Differences Between Hog iPC and Other Wholehog Consoles

The Hog iPC is optimized to operate with the Wholehog application. Wholehog show files are completely compatible with show files programmed on any Wholehog OS console, but *not* compatible with classic Wholehog II operating systems (such as Hog 2PC).

Although the front panel of the Hog iPC console is very similar to the Wholehog III console, its capabilities vary in some specific ways.

31.1.1 Patching

When using the internal DMX outputs or external USB DMX Widgets or Super Widgets instead of direct Ethernet connection to DMX Processors, Wholehog OS uses a 'virtual' DMX Processor 8000 when patching.

The Hog iPC console's four internal DMX outputs are pre-configured within the Wholehog application. Each of the four outputs is mapped to the first four DMX outputs of DP #1 within the Wholehog OS. Any external USB Widgets or Super Widget can be mapped to subsequent universes using the Widget Outputs tab in the DMX Processor Settings window (opened by pressing the Settings button in the Network window). See *Patching Fixtures (p.138)* for details on patching fixtures to DPs for DMX output.

If you connect external DMX Processors, they should be configured to start at DP #2; see *Adding and Removing DMX Processors (p.138)*.

31.1.2 Trackball Preferences

Any changes you make to the pointer mode for the trackball in the User Preferences window regarding the bottom two buttons will be ignored. They will always behave as left and right click options when in pointer mode. You can still modify these buttons when in ball mode.

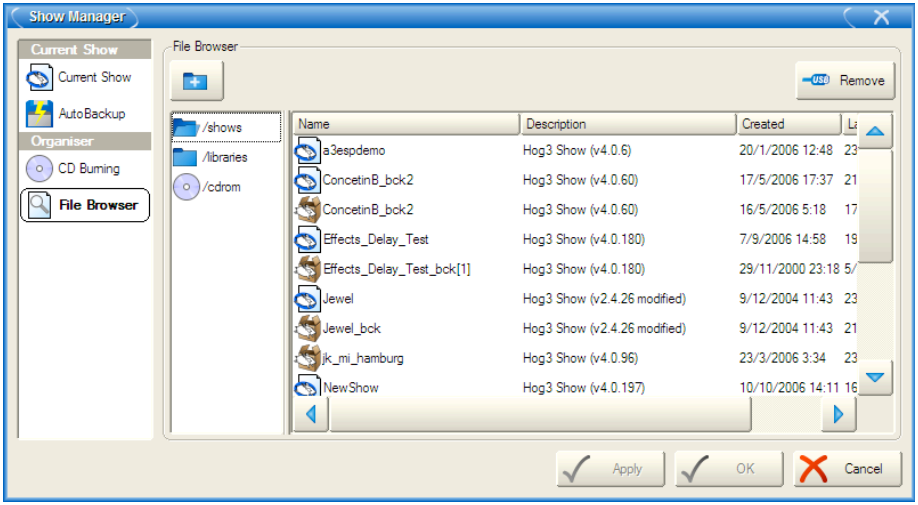
31.2 Working with Show Files

31.2.1 Show File Location

All shows stored on the Hog iPC console are stored in the 'Hog3PC Shows' folder. You can create new sub-folders using the Hog iPC Configuration Panel's File Management pane, or within the New Show window.

31.2.2 Transfering Show Files

A Wholehog show file is actually a folder containing several subfolders and files. Within the Wholehog application and the Hog iPC Configuration Panel, this show folder is displayed as a single Wholehog show file with a Wholehog icon.



If you copy this file to an external drive, you will be able to access the subfolders and files that make up your show.

Important

Altering or changing the hierarchy of any of the files within a Wholehog show file folder will corrupt the show file.

31.3 Configuring External USB DMX Widgets

The Hog iPC console can support up to eight universes via USB DMX Widgets and Super Widgets. Four are internal to the console. You can connect up to four external USB DMX widgets (one universe each) or one USB DMX Super Widget (four universes) to add additional universes.

Before you begin configuring connected widgets, ensure that a USB DMX Widget or Super Widget is connected to a USB port of the console. The Link indicator on the widget should be illuminated and it will blink every 2 seconds to indicate that it is functioning correctly.

To configure the widgets:

1. Setup → Network : open the Network window.

2. Select the DMX Processor in the list by clicking on its Network Number, and press the Settings button to open the DMX Processor Settings window. See *Figure 31.1, "The Widget Outputs pane of the DMX Processor Settings window"*
3. Select the Widget Outputs pane.
4. To configure a widget to an output port of a DMX Processor, click on the box associated with the port and select the widget from the list of serial numbers that appears. Super Widget ports will appear with the serial number followed by an output number. A single widget or single output of a Super Widget may only be connected to one port at any one time. If a widget that is already connected to one port is connected to a second port, it will automatically be disconnected from the first port.

   Some widget serial numbers may appear with *red* text. This indicates that the USB DMX Widget is not compatible with current Wholehog software and must be enabled. Please contact HES for upgrade information.

Tip

You can identify which widget is connected to the port by selecting the Beacon button to the right of the port. The widget connected to that port will flash its indicator lights for a few seconds.

5. Click OK. The widgets that have been connected should now have their Active, DMX OK and TX Mode indicators illuminated.

Figure 31.1. The Widget Outputs pane of the DMX Processor Settings window

31.4 MIDI and Linear Timecode

The Hog iPC console has a SMPTE input as well as MIDI in, out and thru ports. MIDI and SMPTE are both automatically configured with the Hog iPC hardware. See *Working with Audio, MIDI and Timecode (p.317)* for more information on using MIDI and timecode. In addition, the Hog iPC supports the use of the Wholehog III MIDI/Timecode Processor for additional timecode inputs and outputs; see *Working with Network Processors (p.83)*.

31.4.1 Timecode Input

The Hog iPC console only supports one input of timecode in either a SMPTE or MIDI format via the internal connections. Other timecode formats available within the Wholehog OS require the use of a MIDI/Timecode Processor.

31.4.2 MIDI

You can observe MIDI IN and MIDI OUT activity on the top two LEDs on the console's back panel. The LEDs will flash to indicate each time a MIDI message is sent or received. MIDI functionality within the Hog iPC console is the same as in the Wholehog OS.

31.5 Networking with Wholehog Shows

The Wholehog application is capable of connecting as a client to other Wholehog OS shows via an Ethernet network. Additionally the Wholehog application can act as a server and allow other Wholehog OS consoles to connect to it as clients via Ethernet. See *Setting Up the Network (p.75)* for information on network configuration.

Section 32: The Road Hog and Road Hog Full Boar Consoles

32.1 Differences Between Road Hog and Other Wholehog Consoles

The Road Hog operates with the Wholehog application, and show files are completely compatible with show files programmed on any Wholehog system, but *not* compatible with Wholehog 2 control systems.

Although the front panel of the Road Hog console is very similar to the Wholehog III console, its capabilities vary in some specific ways.

32.1.1 Patching

The Road Hog console's four internal DMX outputs are pre-configured within the Wholehog application. Each of the four outputs is mapped to the first four DMX outputs of DP #1 within the Wholehog OS. The software utilizes one 'virtual' DMX Processor when patching to these four outputs. The Road Hog Full Boar also utilizes one 'virtual' DMX Processor to patch its twelve universes. See *Patching Fixtures (p.138)* for details on patching fixtures to the DMX Processor for DMX output.

32.1.2 Trackball Preferences

Any changes you make to the pointer mode for the trackball in the User Preferences window regarding the bottom two buttons will be ignored. They will always behave as left and right click options when in pointer mode. You can still modify these buttons when in ball mode.

32.1.3 Lights

Like the Wholehog III, the Road Hog has desklights to illuminate the console's front panel. It also has a worklight to illuminate your paperwork in front of the console, and blue side markers.

Desklights

You can adjust the brightness of the desklights by holding down the Setup key and adjusting the third parameter wheel. By default, the desk lights are on while the console is being used and turn off after a period of inactivity; the period is determined by the Desk and Worklight Off time in the Appearance pane of the User Preferences window. You can also use the fourth (right hand) parameter wheel to adjust the brightness of the LEDs in the keys on the front panel.

Worklight

The front white worklight of the Road Hog console provides illumination of paperwork and the table surface. You can adjust the brightness of the worklight by holding down the Setup key and adjusting the second parameter wheel. By default, the work light is on while the console is being used and turns off after a period of inactivity; the period is determined by the Desk and Worklight Off time in the Appearance pane of the User Preferences window. The worklight can also be quickly toggled on or off by pressing Pig + Setup. The blue side marker lights on the front of the console are always on when the console is powered on.

32.2 Starting the Console

To start the Road Hog console:

1. Connect the console to AC mains power, between 100 and 240v.
2. Check that the AC power switch on the back panel of the console is switched On.
3. Once the console boots, a startup animation will play. When the animation ends, the console displays the Start window.

Tip

Touching the screen anywhere or clicking on the mouse during the animation skips the animation and displays the Start window.

Note that turning on the AC power switch will boot up the console without having to press the power button ⏻. However if the console was shut down from the software and the AC power switch is already on, then locate the power switch marked ⏻ on the top of the console and press to power up the console.

32.3 MIDI and Linear Timecode

The Road Hog console only supports one input of timecode in SMPTE format via the the external USB SMPTE Widget. The Road Hog Full Boar includes a SMPTE input. Other timecode formats available within the Wholehog OS are not available on the Road Hog. See *Working with Audio, MIDI and Timecode (p.317)* for more information on using timecode.

The Road Hog Full Boar supports MIDI IN and OUT. You can observe MIDI IN and MIDI OUT activity on the top two LEDs on the console's back panel. The LEDs will

flash to indicate each time a MIDI message is sent or received. MIDI functionality within the Road Hog Full Boar console is the same as in the Wholehog OS.

MIDI is not currently supported with the Road Hog console.

32.4 Restoring the Road Hog System Files

The Road Hog System Restore utility allows reinstallation of the software from a location on the internal hard drive, or from external USB drives.

32.4.1 System Restore from the Internal Drive

The Road Hog console includes a system restore routine that can restore the original software and XPe image on the console. A protected partition on the hard drive stores the files needed to create a clean restore of the Road Hog console software. Newer versions of software may be available at *www.flyingpig.com*.

To restore your system files from the hard drive, you'll need:

- USB Keyboard.

To restore the system files:

1. Connect the USB keyboard to the console.
2. As the system boots up, press any key on the keyboard when the boot manager screen is displayed. Note that this screen is displayed only for 1 second during the boot process.
3. Select Road Hog System Restore from the boot manager screen and press Enter on the keyboard. Selecting Road Hog Console will boot the console normally.
4. A recovery screen will prompt you to select a Partial recovery or Exit. The partial recovery process will reinstall the XPe image and the Wholehog software without erasing your show files.
5. The console will immediately begin drive restoration. The process may take anywhere from 10-15 minutes, and will automatically reboot your console when finished. Do not touch any keys or attempt to interrupt the restore process. If the process is interrupted for any reason, simply reboot and return to Step 1 to ensure the Road Hog console is completely restored.

32.4.2 System Restore from a USB Drive

The Road Hog console system restore routine can restore the original software or upgrade the XPe image from external USB drives (Flash, CD, ZIP). Newer versions of software may be available at *www.flyingpig.com*.

To restore your system files from a USB drive, you'll need:

- Road Hog System Restore image on a USB drive (flash, CD, or Zip drive). The image must be an ISO image properly extracted to a CD or bootable flash drive; see *Creating a Bootable USB Flash Drive (p.363)*.
- USB Keyboard.

To restore the system files:

1. Connect the USB keyboard to the console.
2. Connect the USB drive containing the System restore image.
3. As the system boots up, press F8 on the keyboard to display the boot device selection screen.
4. Select the USB device that contains the system restore image from the list.
5. A recovery screen will prompt you to select a Full or Partial recovery. A full recovery will erase the show files on the hard drive and a partial will not.

Important

The Full recovery process will remove *all* data from the Road Hog hard drive, including show files. The Partial recovery process will reinstall the XPe image and the Wholehog software without erasing your show files.

6. The console will immediately begin drive restoration. The process may take anywhere from 10-15 minutes, and will automatically reboot your console when finished. Do not touch any keys or attempt to interrupt the restore process. If the process is interrupted for any reason, simply reboot and return to Step 1 to ensure the Road Hog console is completely restored.
7. Once the system is restored and rebooted, remove the System Restore USB drive and store in a safe place.

Restoring Touchscreen Configuration after a Full Restore

Following the completion of a full system restore process, you should calibrate the touchscreens:

1. Setup → Control Panel → Displays : open the Displays pane of the Control Panel.
2. Press the Calibrate Touch Screens button and follow the on-screen instructions.
3. Setup → Quit → Shut Down. Once shutdown, restart the console to confirm that the screens are calibrated.

32.4.3 Creating a Bootable USB Flash Drive

The Road Hog console's System Restore routine also contains a utility to create bootable USB flash drives with or without a restore image.

Important

This process will remove *all* files from the USB flash drive.

To create a bootable flash drive, you'll need:

- Road Hog System flash drive or other bootable capable flash drive of greater than 500Mb capacity.
- A USB Keyboard.

To create the bootable flash drive:

1. Connect the USB keyboard to the console.
2. Make sure that the USB flash drive is *not* connected to the console.
3. As the system boots up, press any key on the keyboard when the boot manager screen is displayed. Note that this screen is displayed only for 1 second during the boot process.
4. Select Road Hog System Restore from the boot manager screen and press Enter on the keyboard. Selecting Road Hog Console will boot the console normally.
5. The recovery screen will be displayed; at the bottom of the screen select Make Bootable Flash Drive.
6. Insert the USB drive and select it from the drop down list to make it bootable.
7. To place the current XPe image from this Road Hog console on the flash drive, select Add Restore Files to the Flash Drive.
8. Press Select to create the USB bootable flash drive image. This process will remove *all* files from the USB flash drive.
9. When complete, select Exit from the restore screen to boot the console.
10. Once the USB flash drive is made bootable, you can use a computer to extract an ISO image from *www.flyingpig.com* containing the latest Road Hog image.

Part A. Appendices

Section 33: Visualiser Connectivity

The Wholehog III, Hog iPC and Hog 3PC consoles are capable of connecting to visualisers directly connected to the Wholehog network. Currently ESP Vision, WYSIWYG, MSD, Capture and Light Converse are supported. The Wholehog III Connectivity application must be installed on the visualization computer for this connectivity to function.

This section describes the basic information needed to install the Wholehog III Connectivity application on your visualiser computer as well as the configuration of the application. For in depth visualiser usage, please contact the visualiser manufacturer; see *Visualiser Support Contacts (p.377)*.

33.1 Installing the Connectivity Application

Download the current Wholehog III Connectivity installation application from the Flying Pig Systems website: *www.flyingpig.com*. Alternately a Wholehog III full installation CD or ISO image download (version 1.3.8 or greater) contains the Wholehog III Connectivity installation application within the VIZSETUP folder.

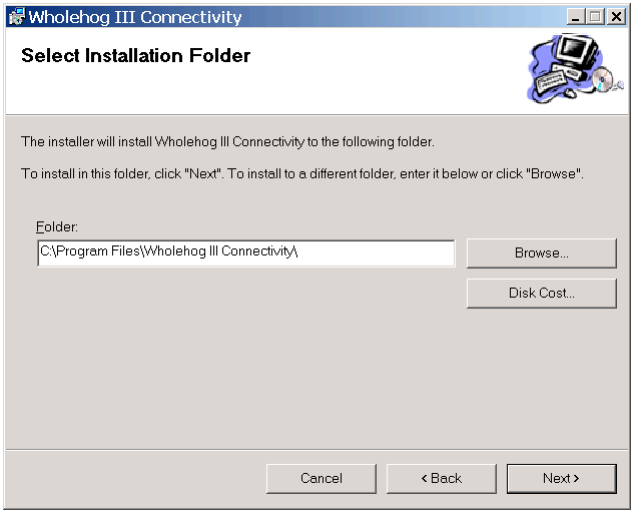
To install the connectivity application:

1. Automatic installation:
   a. Insert the CD into your PC.
   b. The install wizard should start automatically.
2. Manual installation:
   a. Insert the CD into your PC.
   b. Double click the setup.msi file to launch the install wizard.
3. Press Next to begin the installation process.

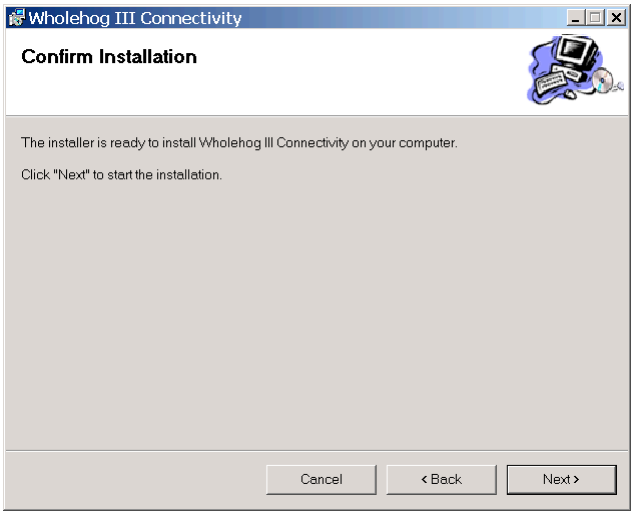
Wholehog III Connectivity
Welcome to the Wholehog III Connectivity Setup Wizard
The installer will guide you through the steps required to install Wholehog III Connectivity on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

4. Select an installation folder. By default the software will be installed into the `C:\Program Files\Wholehog III Connectivity\` directory.

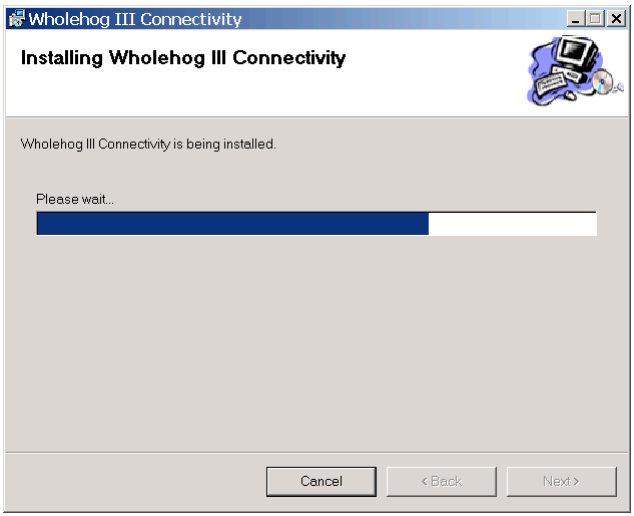
   You can browse to a different directory to select another location for the application. Click on Next to continue the installation.


Wholehog III Connectivity
Select Installation Folder
The installer will install Wholehog III Connectivity to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files\Wholehog III Connectivity\
Browse...
Disk Cost...
Cancel
< Back
Next >

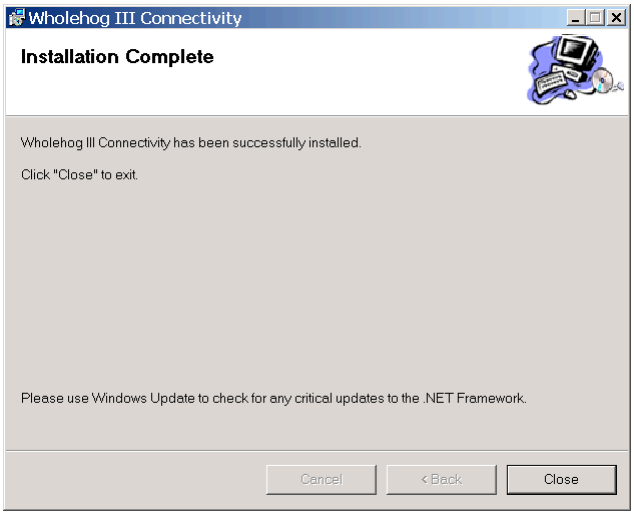
5. Confirm the installation: after confirming drive space, the installation will be ready to begin. Press Next to begin the installation.


Wholehog III Connectivity
Confirm Installation
The installer is ready to install Wholehog III Connectivity on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

6. Installation: during the installation a progress bar will be shown:



7. Completing the installation: when the installation is complete, press Close to exit the installer.


Wholehog III Connectivity
Installation Complete
Wholehog III Connectivity has been successfully installed.
Click "Close" to exit.
Please use Windows Update to check for any critical updates to the .NET Framework.
Cancel
< Back
Close

33.2 Connecting to ESP Vision, MSD, Capture and Light Converse

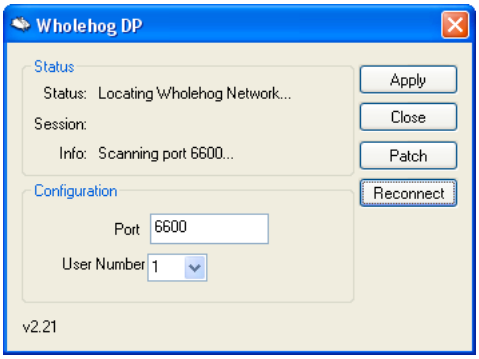
The Wholehog visualiser connectivity supports multiple DMX Processors dependent upon the number of universes supported by your visualiser and/or license. Contact the visualiser manufacturer for upgrade information.

33.2.1 Configuring Visualisers

Refer to your visualiser documentation for information regarding configuration of DMX input via the Wholehog visualiser connectivity application. Most visualisers require selecting the input source and it must be mapped to the Wholehog connectivity.

33.2.2 Configuring the Network Connection

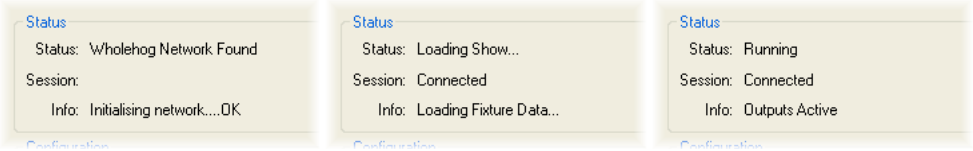
As the visualiser application opens, the Wholehog DP window will be opened on the bottom right of your visualiser computer screen:



A Wholehog logo will also be placed in the Windows task bar when this application is running:

If you close the dialog box, the Wholehog DP will continue to run, and double-clicking on the task bar icon will re-open the dialog box.

When a Wholehog server is detected on the network the Status field will change to Wholehog Network Found, then to Loading Show, and finally to Running:



The Session and Info fields will contain additional network information.

The Wholehog DP application can be configured similarly to an actual DMX Processor. You can assign Wholehog network port and the net number for this application. The Port field must be assigned to the same port as your Wholehog console on the network. The Number field represents the net number and is similar to the number in the upper right hand corner on a DMX Processor.

Assign the number to a unique device net number that is not used by any other devices on the Wholehog network. Press Apply after making changes.

33.2.3 Configuring the Visualiser Universes

In the Wholehog DP window on your visualiser computer press the Patch button to open the Patch window. Using this window you can connect any of the 24 DMX universes within your visualiser to any DMX Processor and universe from your Wholehog show. For example, to assign visualiser universe 3 to respond to the DMX from universe 3 of DMX Processor 2, simply select DP# 2, Universe 3 in the #3 row. Press OK after completing the patching.

33.2.4 Using the Connectivity with ESP Vision, MSD, Capture or Light Converse

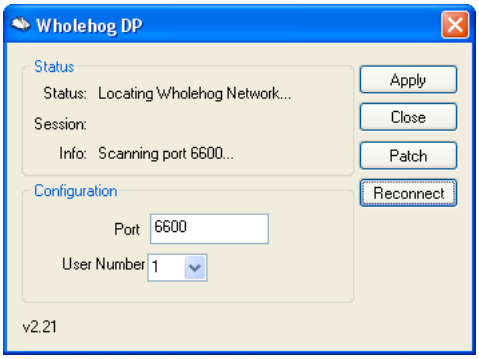
Once the above configuration is complete, the connectivity between the Wholehog system and the visualiser should begin working. You can close the Wholehog DP window and the connectivity will continue as long as the Wholehog logo remains in the task bar:

33.3 Connecting to WYSIWYG

The Wholehog Connectivity for WYSIWYG supports multiple DP's up to the number of channels supported by your WYSIWYG dongle. Contact Cast for WYSIWYG upgrade information.

33.3.1 Configuring the Network Connection

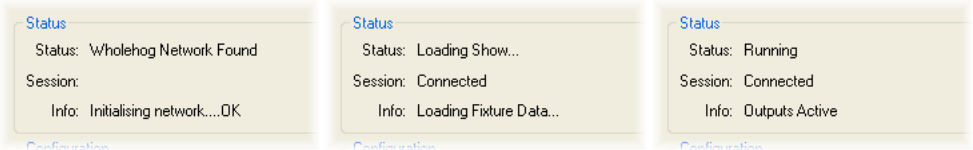
When WYSIWYG is launched, the Wholehog DP window will be launched and opened on the bottom right of your visualiser computer screen:



A Wholehog logo will also be placed in the Windows task bar when this application is running:

If you close the dialog box, the Wholehog DP will continue to run, and double-clicking on the task bar icon will re-open the dialog box.

When a Wholehog server is detected on the network the Status field will change to Wholehog Network Found, then to Loading Show, and finally to Running:



The Session and Info fields will contain additional network information.

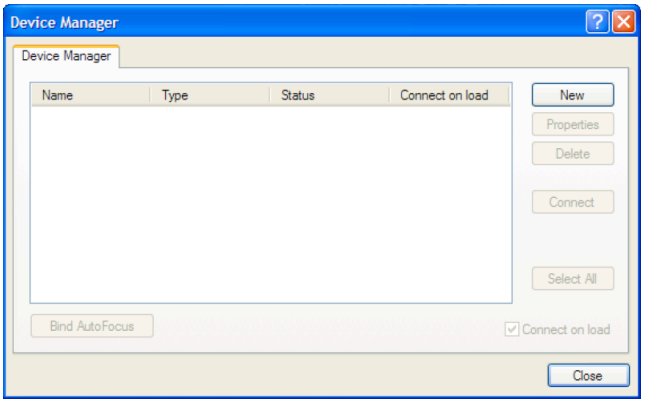
The Wholehog DP application can be configured similarly to an actual DMX Processor. You can assign Wholehog network port and the net number for this application. The Port field must be assigned to the same port as your Wholehog console on the network. The User Number field represents the net number and is similar to the number in the upper right hand corner on a DMX Processor.

Assign the User Number to a unique device net number that is not used by any other devices on the Wholehog network.

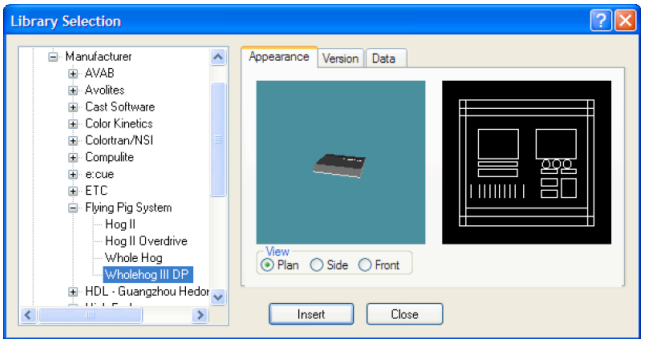
33.3.2 Configuring WYSIWYG

To configure WYSIWYG:

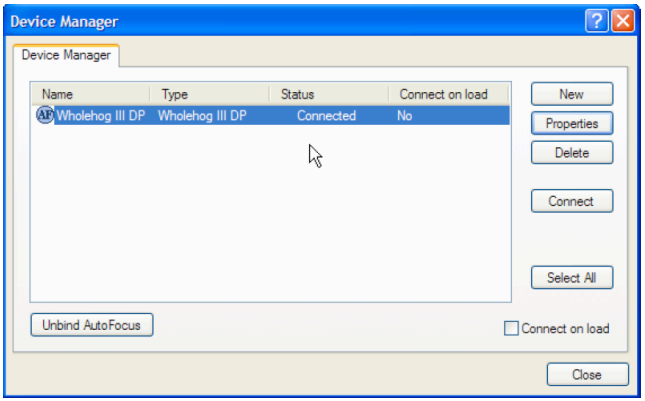
1. In WYSIWYG open the Device Manager : Live → Device Manager



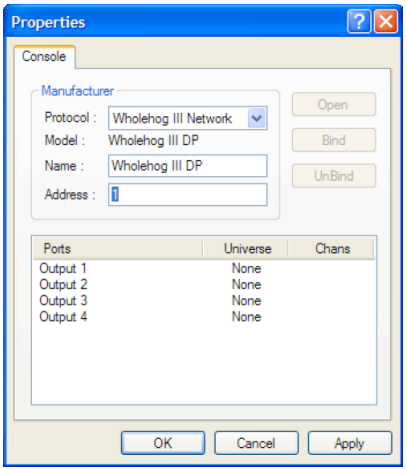
2. Click on New to add an additional device. Select Wholehog III DP as the new device:



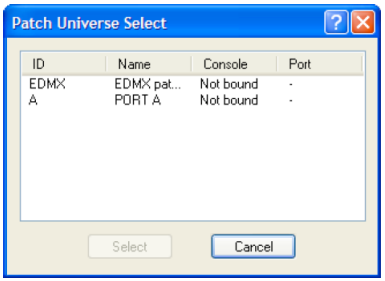
3. The device window will now display the Wholehog III DP:



Double click on this device or select it and press Properties. The Properties window will open:



4. In the Address field enter the DP number used when patching on the Wholehog console. Click OK to close this window.
5. Bind the ports to the universes in your WYSIWYG show; consult the WYSIWYG documentation for detailed instructions.

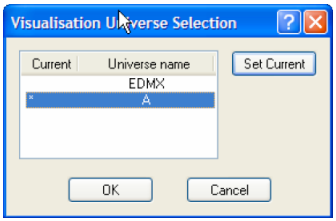


6. Once the universes are bound, you can connect to the Wholehog DP. Repeat the above steps for each DMX Processor used in your Wholehog show file.

33.3.3 Additional Steps for WYSIWYG Console Edition

When using some versions of Console Edition (CE) WYSIWYG to connect directly to a Wholehog system only one universe of visualization is possible at a time. If your version of CE is limited to one universe, you will need to specify which universe is active within the WYSIWYG file:

1. With the WYSIWYG file open, go to the Live Module and select Edit → Universes.
2. The Visualisation Universe Selection window will open. This window will display all the currently configured universes within your drawing. Use this window to select the universe you wish to visualize from the console.



33.3.4 Using the Connectivity with WYSIWYG

Once the above configuration is complete, the connectivity between the Wholehog system and WYSIWYG should begin working. You can close the Wholehog DP window and the connectivity will continue as long as the Wholehog logo remains in the task bar:

Autofocus Feature

WYSIWYG can send information back to your Wholehog console to allow lights to be automatically positioned to a particular location on stage, rather than individually positioning the fixtures using the console's controls. Refer to the WYSIWYG Users Manual for further details on the Autofocus feature.

When WYSIWYG Autofocus is enabled, selecting and deselecting fixtures in WYSIWYG will do the same on your console. You can also use the functions in WYSIWYG to assign the intensity, iris, pan, tilt, and CMY colour mixing values in the active editor or programmer on the Wholehog console.

Note that the Autofocus feature requires that the Wholehog show file uses a fixture library version 2.5 or greater.

33.4 Troubleshooting

1. **When launching a visualiser a message saying `Error loading <path>/lxhog3dp.dll or hog3.dll` appears.**

   The driver can not be located. Run the installer again.

2. **Windows 98 or ME will not run the msi installer.**

   Download and install the Windows Installer 2.0 update from Microsoft and run the Wholehog Connectivity installer again.

3. **The Wholehog DP window does not open when the visualiser is launched.**

   Run the installer again.

4. **The Wholehog DP window always says `Locating Wholehog Network…`**

   Check the port matches on the settings on the console. Check Ethernet connections. Check that there is only one DHCP server in your network. Reboot the visualiser computer.

5. **The Wholehog DP window displays `Connection Error` while trying to connect.**

   Check the network settings on both the visualiser computer and the Wholehog console. Reboot the visualiser computer.

6. **The Wholehog DP window displays `Couldn't get file handle` while trying to connect.**

   Check that another visualiser is not running on the same computer. Reboot the visualiser computer.

7. **The Wholehog DP window displays `Loader version is old (need x.y.z)` while trying to connect.**

   You need to update the Connectivity Application. Check *www.flyingpig.com* for the latest version.

8. **No visible fixture output in the visualiser.**

   Check that the console Grand Master is up. Cycle the Blind key to assert the contents of the Programmer.

9. **WYSIWYG displays `Could not connect the following consoles: Wholehog DP`.**

   Check that the Wholehog DP window indicates it is connected to the console and is running. Check that the address in the Properties window on WYSIWYG matches the DMX Processor in your Wholehog show, and that another device is not already connected to that number.

10. **WYSIWYG Autofocus does not appear to function.**

    Check that the Wholehog show is using a version 2.5 or greater fixture library. Check with Cast regarding the WYSIWYG fixture libraries.

33.5 Visualiser Support Contacts

ESP Vision: *www.espvision.com*

WYSIWYG/Cast: *www.castlighting.com*

MSD: *www.martin.com*

Capture: *www.capturesweden.com*

Section 34: The Fixture Builder

The fixture builder enables users the ability to create their own fixture libraries from scratch, or from existing libraries within the console. The fixture builder should only be used in extreme cases when a new library is needed and there is no time to contact High End Systems support. Generally it is best that you contact *support@flyingpig.com* to request properly built fixture libraries.

The fixture builder utility is only recommended for advanced programmers with extensive lighting fixture and Wholehog Operating Software knowledge. Knowledge of the fixture DMX protocol is essential prior to creating a custom library. This guide roughly explains the use of the fixture builder, but in no way is intended to be a complete manual for creating custom libraries. Users are urged to contact support to have libraries properly built and installed into the software.

34.1 Working With the Fixture Builder

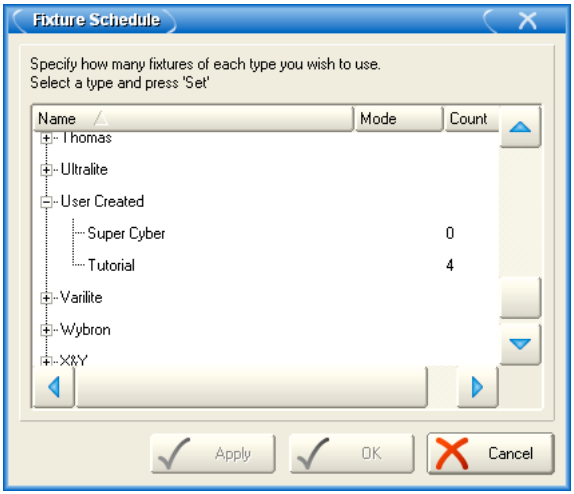
The fixture builder allows users to create from scratch basic fixture libraries. Use of the fixture builder requires in-depth knowledge of the fixture protocol as well as the standard library principles used in the Wholehog OS. The fixture builder utility does not allow full access to all abilities of libraries built by High End Systems, and therefore should only be utilized in extreme situations. Please note that custom libraries become part of the show file they were created in and can be merged between show files.

Libraries can be built from a blank canvass or can be copied from existing fixtures within the library (when using V4 libraries). When an existing library is copied, many of the unique elements of the factory created library are removed for compatibility with the fixture builder utility. The new fixture library may not behave exactly like the library it is a copy of.

34.1.1 Adding User Created Libraries to a Show

Once libraries have been built within the fixture builder, they are stored within the show file. You can then add these fixtures to your show in the same method as existing fixtures within the selected library:

1. In the Fixture window, open the Fixture Schedule.
2. Scroll down to the User Created manufacturer and expand to view all custom made libraries:



3. Add, patch, and program custom libraries in the same manner as existing libraries.

Once a fixture is created, it behaves the same as built-in fixture libraries:

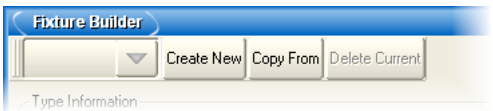
- You can merge custom libraries from one show to another using the Merge Show function.
- You can use the Edit Fixtures window to adjust default values and further customize user created libraries.
- You can replicate and replace to and from user created fixtures.
- You should send a show containing your custom made fixtures to *support@flyingpig.com* so they may be added to future built-in libraries.

34.1.2 Creating, Editing and Deleting Fixture Libraries

You can create, edit and delete fixture libraries in the Fixture Builder window:

- Setup → Patch → Fixture Builder : open the Fixture Builder window.

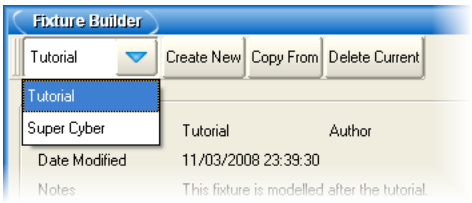
Select an option from the buttons at the top of the window:



The options are:

- **Create New:** creates a new fixture from scratch. See *Creating a New Fixture Library From Scratch (p.381)*.

- **Copy From:** creates a new fixture based on an existing fixture within a fixture library. See *Creating a New Fixture Library Using an Existing Library (p.382)*.
- **Delete Current:** deletes the user-created library selected in the drop down list.
- To edit any existing User Created libraries, select it from the drop down list:



Creating a New Fixture Library From Scratch

When you press the Create New button, the Create New Custom Type window will open; see *Figure 34.1, "The Create New Custom Type window"*.

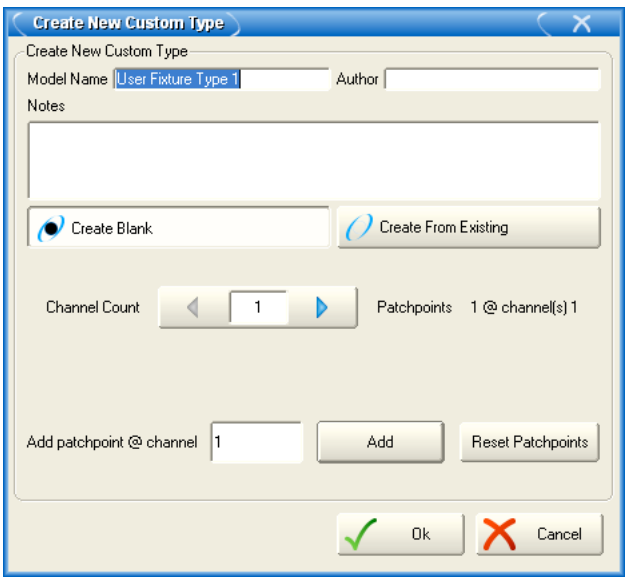


Figure 34.1. The Create New Custom Type window

Within this window you can define the Model Name, Author, and enter any Notes. You can also choose to create blank or create from existing from within this window. In the Channel Count cell, enter the total number of DMX channels used by the fixture. In the Add Patchpoint @ Channel cell, enter a DMX channel number to define a new patchpoint.

A patchpoint is used to create fixtures with dual DMX addressing capabilities (similar to a scroller dimmer fixture type). When the fixture is later patched in the patch window, you will be able to patch this fixture at two discrete DMX addresses as you have defined the starting point for each within this window (the 1st channel is automatically defined as the first patch point) Only 1 additional patch point is currently allowed. Select OK to submit the library information and begin the building process; see *Building the Fixture (p.382)*.

Creating a New Fixture Library Using an Existing Library

When you press the Copy From button, the Create New Custom Type window will open; see *Figure 34.2, "The Create New Custom Type window"*.

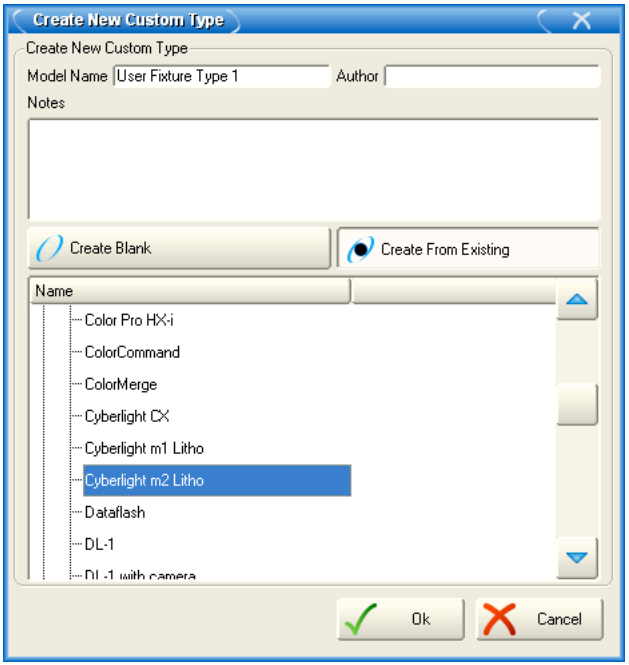


Figure 34.2. The Create New Custom Type window

Within this window you can define the Model Name, Author, and enter any Notes. The currently loaded fixture library within the show will be displayed. Select a manufacture and fixture to copy the existing library to the fixture builder. Select OK to submit the library information and begin the building process; see *Building the Fixture (p.382)*.

34.1.3 Building the Fixture

Once you have added a fixture library from blank or from a copy, you will see the DMX channels in the fixture builder:

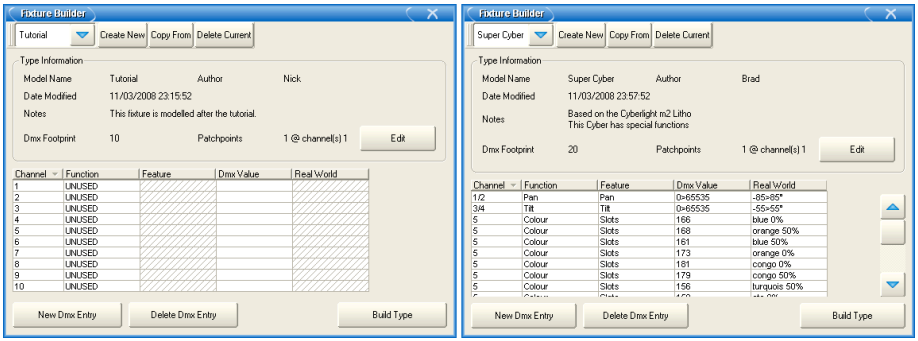


Figure 34.3. The Fixture Builder window

Use the fixture's DMX Protocol to edit the cells as needed to build the custom library. The various cells and their uses are:

Type Information

- **Model Name:** the name assigned to this library.
- **Author:** the author of the library.
- **Date Modified:** the date of the last modification to this library.
- **Notes:** any notes entered by the author.
- **DMX Footprint:** total number of DMX channels used by this fixture.
- **Patchpoints:** total number of unique patch points and their location for this fixture.
- **Edit:** press this button to edit the information about this library.

Channel

This cell represents the DMX Channel number per the fixture's protocol. Several entries for a single DMX channel may exist, each defined with different functions or features. Typically each DMX value or range defined by a fixture's DMX protocol will result in an additional DMX entry for the same DMX channel. Use the New DMX Entry button to add additional blank rows for the currently selected DMX channel, and the Delete DMX Entry button to remove unwanted rows.

16-bit DMX functionality can be defined by combining two DMX channels with the same function and feature. Select a DMX channel cell, press Set and type in the two DMX channels to be combined (separated by / from the console keypad). For example to combine DMX channels 3 and 4 to create 16-bit DMX functionality, enter **3/4** in the Channel cell for channels 3 and 4. Combined channels do not need to be sequential (for example, 3/8 is valid).

Function

This cell represents the function or parameter used to access this channel. A function is defined as the parameter name displayed when programming the fixture. Examples of functions include: intensity, pan, tilt, gobo, cyan, etc. Functions are selected from a dialog box that is sorted by the following Kind categories: Unused, Intensity, Position, Colour, Beam, and Control. Most functions also have a sub-category called feature.

Feature

A feature is defined as a sub-classification of a function. For example, a gobo function can have slots, spins, and random features. All features within a function are mutually exclusive. In other words, each feature is a unique behaviour of the function and no two features can occur at the same time. Each feature can have its own DMX value or range of values. The function type defined in the function cell will determine what features are available in the feature cell. For instance, selecting a Strobe function will result in a choice of 13 features including: shutter, rate, ramp, ramp/snap, random, etc. Many functions have pre-defined features that cannot be changed (Intensity, Pan, Cyan, etc).

When building a fixture library, you define a feature as a sub-set of a particular function and associate it with a specific DMX value or range. A gobo function might have six slot features (one for each gobo), one spin feature, and one random feature. Each of these entries should be mapped to the corresponding DMX value(s) according to the fixture's DMX protocol. A single DMX channel can have many different functions and features, each with their own unique DMX values or ranges of values.

DMX Value

This field is used to define the exact DMX value or range of values used by the function and feature of the DMX channel. Entries in this field can be a single DMX value or a range of values. Ranges can be entered with the Thru key on the console keypad. For example, 0>255 would result in a full range for an 8-bit DMX channel. DMX ranges can be inverted if desired, for example: 255>0 to match the real world range they correspond to. If a function is defined as a 16-bit DMX function, then DMX values and ranges may be between 0 and 65535.

If a DMX value is out of the allowable DMX range, the minimum or maximum value will automatically be used (an entry of 0>500 will become 0>255).

Real World

This field defines the label, value, or range that is displayed on the console when the function and feature is used. The selected function and feature will automatically define the type of value available within this field. For example, an intensity function will always be displayed as a percentage, while pan or tilt will always be displayed in degrees and strobe frequency in hertz (Hz). You may enter a single value or a range of values (0>260°) using the Thru key on the console keypad. The Real World range will be mapped directly to the corresponding DMX value range. Note that if a single value is entered (100%) for a corresponding DMX value range (0>255), then you will not be able to adjust the parameter throughout the defined range.

When defining the Real World values for a function/feature, you can simply enter the numeric value (0>100) and the predefined unit type will automatically be defined (for intensity this would appear as percentage, for position as degrees, for strobe as hertz); you do not have to enter in the unit type. Also if a Real World value is out of the range of the console, the minimum or maximum value will automatically be used (an entry of 0>200% will become 0>100%).

Many features also allow negative values to be used. When defining the real world values for a rotating gobo, for example, you could enter –50>50rpm. This real world range will be mapped directly to the corresponding DMX value range, so if the DMX value range was 0>255, then the real world value of 0rpm would be equal to a DMX value of 128 (positive rpm values would map to higher DMX values and negative rpm values would map to lower DMX values). Decimals may also be used with some Real World values (22.5>99.7rpm).

In the case of features defined as slots (gobos or colours), an additional popup box will become available when the Real World cell is selected. This dialog box will allow you to select a name for the gobo or colour from a predefined list of names. Slot entries will appear on the slot toolbar during programming. Additionally you can define an offset for the slot name (in the field at the bottom of the dialog). This offset defines the range used by the function when dialling values on the encoder wheel. Leaving this field blank will result in the default (0%) being used.

Additional function/feature selections may result in various Real World value selections via a dialog box. For instance, a strobe function and shutter feature will allow a Real World value entry of either 'open' or 'closed'.

34.2 Fixture Builder Tutorial

This tutorial takes you through the process of building a custom fixture library for a fictitious fixture. Follow the steps to create a custom fixture library.

Fictitious 575 Protocol			
Ch.	*Purpose*	*Value*	*Description*
1	Intensity	0 to 255	0 is out 255 is full
2	Pan Coarse	0 to 255	540 degree pan
3	Pan Fine	0 to 255	
4	Tilt Coarse	0 to 255	270 degree tilt
5	Tilt Fine	0 to 255	
6	Cyan	0 to 255	0 is full, 255 is out
7	Magenta	0 to 255	0 is full, 255 is out
8	Yellow	0 to 255	0 is full, 255 is out
9	Gobo	0	Open
		20-30	Gobo 1 (breakup)
		31-40	Gobo 2 (bubbles)
		41-50	Gobo 3 (cone)
		51-60	Gobo 4 (radial)
		100-150	Gobo wheel spin fwd slow to fast
		151-200	Gobo wheel spin rev slow to fast
		201-255	Random gobo slow to fast
10	Shutter	0	Closed
		1-127	Linear Strobe slow to fast
		128-200	Random Strobe fast to slow
		201-210	Reset Fixture
		221-230	Strike Lamp
		231-240	Shutdown fixture
		241-250	Douse Lamp
		255	Open

34.2.1 Step 1: Create the New Fixture

To create the new fixture:

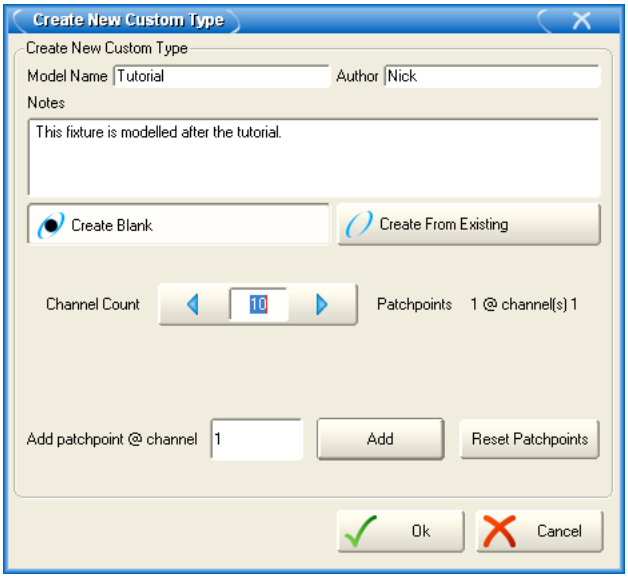
1. Setup → Patch : open the Fixture window.
2. Press the Fixture Builder button.
3. Click OK on the warning dialog.
4. Press the Create New button. The Create New Custom Type window will open.

34.2.2 Step 2: Enter Fixture Details

Enter the Model Name, Author, and Notes by clicking in each cell and pressing Set:

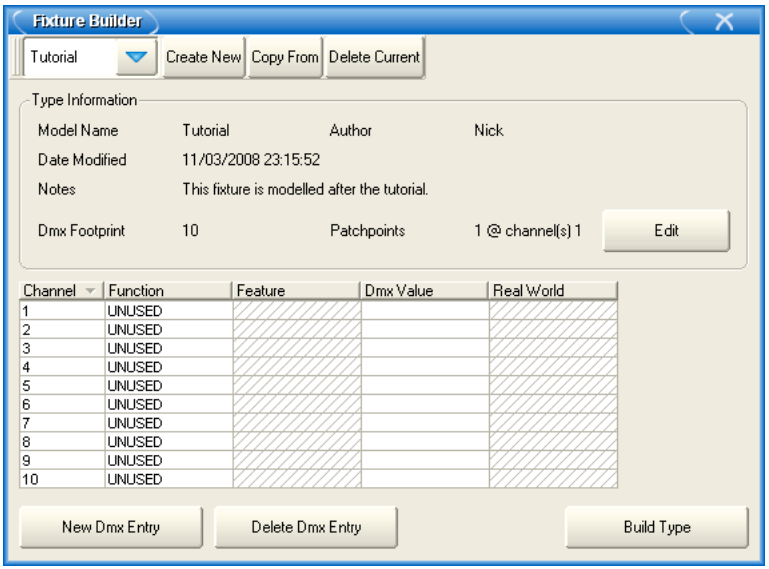
1. Name the model : **`Tutorial`**

2. Enter your name for Author.
3. Enter any notes.
4. Adjust the channel count to match Protocol : 10 channels.



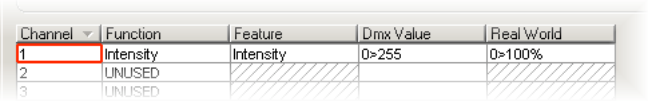
5. Click OK to close this window and start the fixture creation.

The blank new fixture will be displayed:



34.2.3 Step 3: Configure Channel Functions and Features

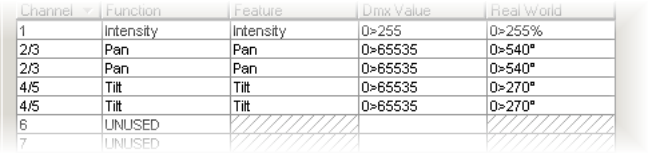
Intensity



Channel	Function	Feature	Dmx Value	Real World
1	Intensity	Intensity	0>255	0>100%
2	UNUSED			
3	UNUSED			

1. Select the Function cell for channel 1 and press Set. A dialog will appear with a list of function categories.
2. Select Intensity on the left column to display a list of Intensity function sub-categories.
3. Select Intensity as the desired function. The window will close and you will see intensity assigned as the function and feature for channel 1. Note that the feature column will auto-fill with 'Intensity'.
4. Select the DMX value cell for channel 1 and press Set. Enter the DMX values range for the intensity channel (0>255) and press Enter.
5. Select the Real World value cell for channel 1 and press Set. Enter the Real World value to be displayed in percentage (0>100) and press Enter.

Pan and Tilt (16 bit)



Channel	Function	Feature	Dmx Value	Real World
1	Intensity	Intensity	0>255	0>255%
2/3	Pan	Pan	0>65535	0>540°
2/3	Pan	Pan	0>65535	0>540°
4/5	Tilt	Tilt	0>65535	0>270°
4/5	Tilt	Tilt	0>65535	0>270°
6	UNUSED			
7	UNUSED			

Define 16 bit channels for Pan and Tilt:

1. Select the channel cell for Channel 2 and press Set. Enter 2/3 to indicate that channels 2 and 3 combine to create a single 16-bit fixture.
2. Select the channel cell for Channel 3 and press Set. Enter 2/3 to indicate that channels 2 and 3 combine to create a single 16-bit fixture.
3. Repeat the above for channels 4 and 5.

Configure Pan and Tilt Functions:

1. Select the function cell for the first 2/3 channel and press Set. A dialog will appear with a list of function categories.
2. Select Position on the left column to display a list of Position function sub-categories.

3. Select Pan as the desired function. The window will close and you will see pan assigned as the function and feature for channel 2. Note the feature column will auto-fill with 'Pan'.
4. Select the DMX value cell for channel 2/3 and press Set. Enter the DMX values range for the intensity channel (0>65535) and press Enter.
5. Select the Real World value cell for channel 2/3 and press Set. Enter the Real World value to be displayed in degrees (-270>270°) and press Enter. This real world value will map the 540 degrees of movement across the DMX range so the middle of the range (32768) is equal to 0°. Note that you could instead enter 0>540° if desired, but then this would be different than existing fixtures as the 0° value would equal a DMX value of 0.
6. Repeat the above for the second 2/3 channel.
7. Repeat all of the above for Tilt on the two 4/5 channels.

Cyan, Magenta, Yellow

4/5	Tilt	Tilt	0>65535	0>270°
4/5	Tilt	Tilt	0>65535	0>270°
6	Cyan	Variable	255>0	0>100%
7	Magenta	Variable	255>0	0>100%
8	Yellow	Variable	255>0	0>100%
9	UNUSED			
9	UNUSED			

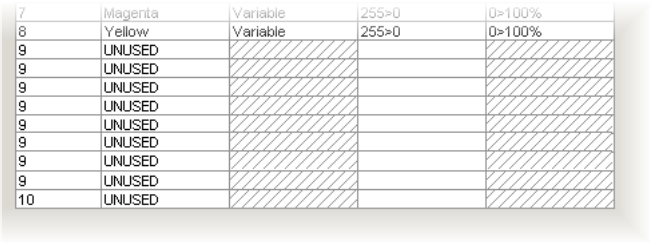
1. Select the function cell for channel 6 and press Set. A dialog will appear with a list of function categories.
2. Select Colour on the left column to display a list of Colour function sub-categories.
3. Select Cyan as the desired function. The window will close and you will see Cyan assigned as the function and feature for channel 6. Note the feature column will auto-fill with 'variable'.
4. Select the DMX value cell for channel 6 and press Set. Enter the DMX values range for the Cyan channel (255>0) and press Enter. Note that the DMX value is inverted because the protocol shows 0 is full colour and 255 is no colour.
5. Select the Real World value cell for channel 6 and press Set. Enter the Real World value to be displayed in percentage (0>100) and press Enter.
6. Repeat the above steps for Magenta on channel 7 and Yellow on channel 8.

Gobo Wheel

Since the DMX Protocol lists 8 discrete DMX values or ranges used by channel 9, the number of DMX entries needs to be increased for this channel:

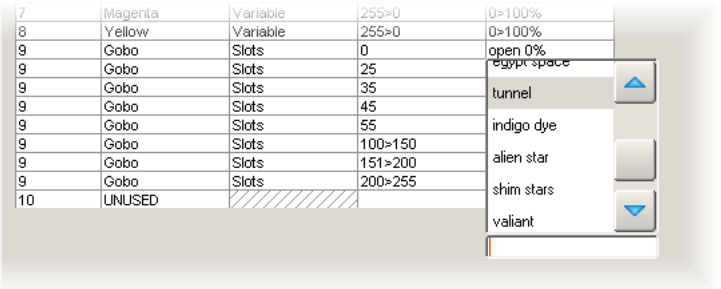
1. Select the Channel cell for channel 9.

2. Press the New DMX Entry button to add an additional DMX entry for channel 9.
3. Repeat the above until there are 8 channel entries for this channel:



7	Magenta	Variable	255>0	0>100%
8	Yellow	Variable	255>0	0>100%
9	UNUSED			
9	UNUSED			
9	UNUSED			
9	UNUSED			
9	UNUSED			
9	UNUSED			
9	UNUSED			
9	UNUSED			
10	UNUSED			

Define each DMX entry for Slots:

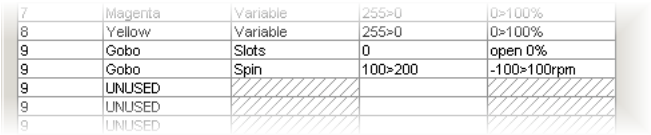


7	Magenta	Variable	255>0	0>100%
8	Yellow	Variable	255>0	0>100%
9	Gobo	Slots	0	open 0%
9	Gobo	Slots	25	
9	Gobo	Slots	35	
9	Gobo	Slots	45	
9	Gobo	Slots	55	
9	Gobo	Slots	100>150	
9	Gobo	Slots	151>200	
9	Gobo	Slots	200>255	
10	UNUSED			

egypt space
tunnel
indigo dye
alien star
shim stars
valiant

1. Select the function cell for a blank DMX Entry of channel 9 and press Set. A dialog will appear with a list of function categories.
2. Select Beam on the left column to display a list of Beam function sub-categories.
3. Select Gobo as the desired function. The window will close and you will see Gobo assigned as the function and feature for channel 9. Note the feature column will auto-fill with 'slots'.
4. Select the DMX value cell for this DMX Entry and press Set. Enter the DMX values range for the first gobo value (0) and press Enter.
5. Select the Real World value cell for this DMX Entry and press Set. A dialog box will display a list of slot names. Select a slot name and press Enter.
6. Repeat the above steps for the other DMX entries for each gobo in the protocol.

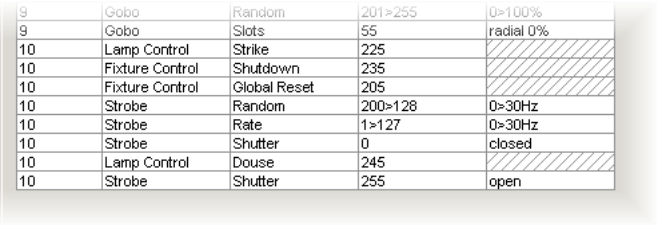
Define each DMX entry for Spins:



7	Magenta	Variable	255>0	0>100%
8	Yellow	Variable	255>0	0>100%
9	Gobo	Slots	0	open 0%
9	Gobo	Spin	100>200	-100>100rpm
9	UNUSED			
9	UNUSED			
9	UNUSED			

1. Select the function cell for a blank DMX Entry of channel 9 and press Set. A dialog will appear with a list of function categories.
2. Select Beam on the left column to display a list of Beam function sub-categories.
3. Select Gobo as the desired function. The window will close and you will see Gobo assigned as the function and feature for channel 9. Note the feature column will auto-fill with 'slots'. Select this cell and press Set. Choose Spin from the dialog box.
4. Select the DMX value cell for this DMX Entry and press Set. Enter the DMX range values for the gobo spin according to the DMX protocol (100>200) and press Enter.
5. Select the Real World value cell for this DMX Entry and press Set. Enter the Real World value to be displayed in RPM (-100>100rpm) and press Enter.
6. Repeat the above steps for the random spin portion of the protocol using another DMX entry for channel 9.

Strobe/Control Channel



9	Gobo	Random	201>255	0>100%
9	Gobo	Slots	55	radial 0%
10	Lamp Control	Strike	225	
10	Fixture Control	Shutdown	235	
10	Fixture Control	Global Reset	205	
10	Strobe	Random	200>128	0>30Hz
10	Strobe	Rate	1>127	0>30Hz
10	Strobe	Shutter	0	closed
10	Lamp Control	Douse	245	
10	Strobe	Shutter	255	open

The number of DMX entries needs to be increased for this channel:

1. Select the Channel cell for channel 10.
2. Press the New DMX Entry button to add an additional DMX entry for channel 10.
3. Repeat the above until there are 8 channel entries for this channel.

Define each DMX entry for Strobe:

1. Select the function cell for a blank DMX Entry of channel 10 and press Set. A dialog will appear with a list of function categories.

2. Select Intensity on the left column to display a list of Intensity function sub-categories.
3. Select Strobe as the desired function. The window will close and you will see Strobe assigned as the function for channel 10. Note the feature column will auto-fill with 'Shutter'.
4. Select the DMX value cell for this DMX Entry and press Set. Enter the DMX value for the Open Shutter according to the DMX protocol (0) and press Enter.
5. Select the Real World value cell for this DMX Entry and press Set. A dialog box will display a list of shutter options. Select the 'open' shutter option and press Enter.
6. Repeat the above steps for the 'closed' shutter ability of the fixture.
7. Select the function cell for a blank DMX Entry of channel 10 and press Set. A dialog will appear with a list of function categories.
8. Select Intensity on the left column to display a list of Intensity function sub-categories.
9. Select Strobe as the desired function. The window will close and you will see Strobe assigned as the function for channel 10. Note the feature column will auto-fill with 'Shutter'. Select this cell and press Set. Choose Rate from the dialog box.
10. Select the DMX value cell for this DMX Entry and press Set. Enter the DMX range for the Linear Strobe according to the DMX protocol (1>127) and press Enter.
11. Select the Real World value cell for this DMX Entry and press Set. Enter the Real World value to be displayed in Hertz (0>30hz) and press Enter.
12. Repeat steps 8-13 for the random strobe ability of the fixture.

Fixture Control commands from Strobe channel:

1. Select the function cell for a blank DMX Entry of channel 10 and press Set. A dialog will appear with a list of function categories.
2. Select Control on the left column to display a list of Control function sub-categories.
3. Select Fixture Control as the desired function. The window will close and you will see Fixture Control assigned as the function for channel 10. Note the feature column will auto-fill with 'Idle'. Select this cell and press Set. Choose Global Reset from the dialog box.
4. Select the DMX value cell for this DMX Entry and press Set. Enter the DMX for the fixture reset according to the DMX protocol (205) and press Enter.
5. Repeat the above steps for the shutdown ability of the fixture.

Note that Real World values are not allowed for Control functions.

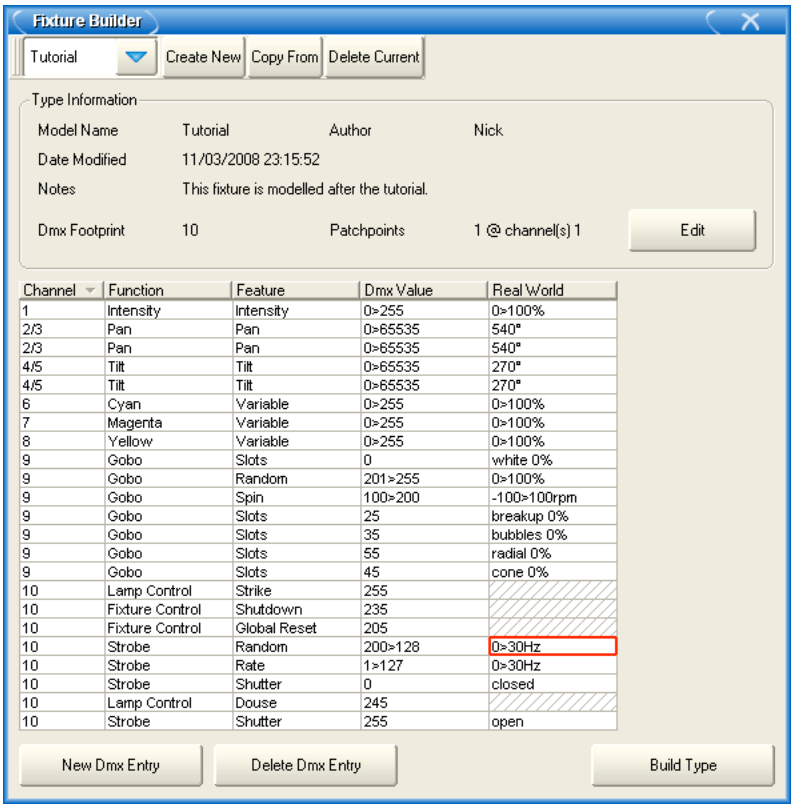
Lamp Control commands from Strobe channel:

1. Select the function cell for a blank DMX Entry of channel 10 and press Set. A dialog will appear with a list of function categories.
2. Select Control on the left column to display a list of Control function sub-categories.
3. Select Lamp Control as the desired function. The window will close and you will see Lamp Control assigned as the function for channel 10. Note the feature column will auto-fill with 'Strike'. Select this cell and press Set. Choose Douse from the dialog box.
4. Select the DMX value cell for this DMX Entry and press Set. Enter the DMX for the lamp douse according to the DMX protocol (245) and press Enter.
5. Repeat the above steps for the lamp strike ability of the fixture.

Note that Real World values are not allowed for Lamp Control functions.

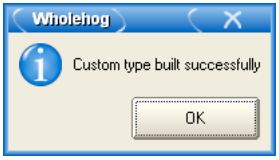
34.2.4 Step 4: Build the Fixture

Your fixture should be similar to the example below:



To build the fixture:

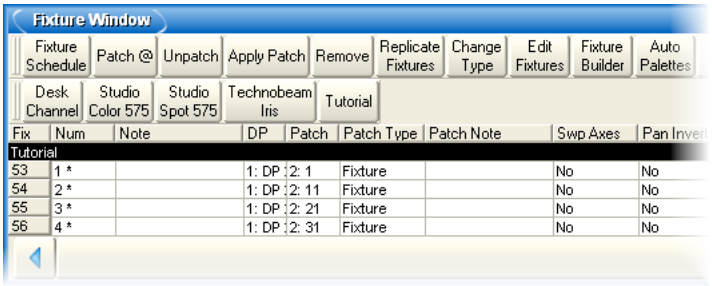
1. Press the Build Type button to build the fixture library.
2. If any errors are found a dialog will explain the error. Make any corrections and build again.
3. A dialog box will confirm a successful build of a library:



34.2.5 Step 5: Add the Fixture in the Fixture Schedule

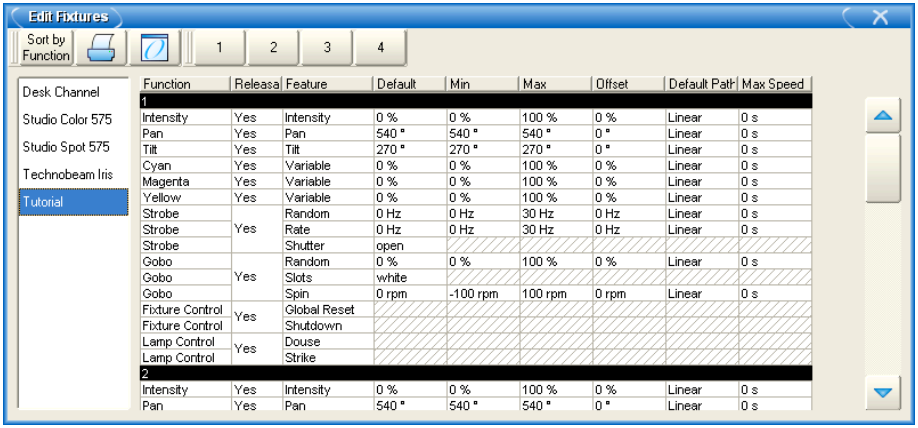
1. Open the Fixture Schedule window and scroll to the User Created manufacturer.

2. Select your new fixture and press Set. Enter the number of fixtures to be used in the show.
3. Press OK and patch the fixtures, swap axes, and so on, as normal:


Fixture Window
Fixture Schedule
Patch @
Unpatch
Apply Patch
Remove
Replicate Fixtures
Change Type
Edit Fixtures
Fixture Builder
Auto Palettes
Desk Channel
Studio Color 575
Studio Spot 575
Technobeam Iris
Tutorial
Fix Num Note DP Patch Patch Type Patch Note Swp Axes Pan Inver
Tutorial
53 1 * 1: DP 1 2: 1 Fixture No No
54 2 * 1: DP 1 2: 11 Fixture No No
55 3 * 1: DP 1 2: 21 Fixture No No
56 4 * 1: DP 1 2: 31 Fixture No No

34.2.6 Step 6: Edit Fixture to Define Default Values

To define the default values for your new fixture, you can edit the defaults for each parameter in the Edit Fixtures window:


Edit Fixtures
Sort by Function
1
2
3
4
Desk Channel
Studio Color 575
Studio Spot 575
Technobeam Iris
Tutorial
Function Releasa Feature Default Min Max Offset Default Path Max Speed
1
Intensity Yes Intensity 0 % 0 % 100 % 0 % Linear 0 s
Pan Yes Pan 540 ° 540 ° 540 ° 0 ° Linear 0 s
Tilt Yes Tilt 270 ° 270 ° 270 ° 0 ° Linear 0 s
Cyan Yes Variable 0 % 0 % 100 % 0 % Linear 0 s
Magenta Yes Variable 0 % 0 % 100 % 0 % Linear 0 s
Yellow Yes Variable 0 % 0 % 100 % 0 % Linear 0 s
Strobe Yes Random 0 Hz 0 Hz 30 Hz 0 Hz Linear 0 s
Strobe Rate 0 Hz 0 Hz 30 Hz 0 Hz Linear 0 s
Strobe Shutter open
Gobo Yes Random 0 % 0 % 100 % 0 % Linear 0 s
Gobo Slots white
Gobo Spin 0 rpm -100 rpm 100 rpm 0 rpm Linear 0 s
Fixture Control Yes Global Reset
Fixture Control Shutdown
Lamp Control Yes Douse
Lamp Control Strike
2
Intensity Yes Intensity 0 % 0 % 100 % 0 % Linear 0 s
Pan Yes Pan 540 ° 540 ° 540 ° 0 ° Linear 0 s

34.2.7 Step 7: Programming Your Custom Fixture

When programming with the fixture from the tutorial, bear in mind the following:

- Pan and Tilt are 16-bit DMX, but appear as a single parameter (and use 2 DMX channels each).
- Cyan, Magenta, and Yellow function properly in respect to the DMX values being inverted from the Real World value.
- The Gobo slots appear on the Slot toolbar.

- The Gobo Spin and Random functions appear on the Gobo encoder wheel.
- The various types of parameters that are controlling channel 10: shutter, strobe, fixture control, and lamp control. Notice how each appears as unique functions, although they all output on the same DMX channel.

Section 35: Keyboard Shortcuts

You can use an external keyboard to operate many of the Wholehog OS's functions. This is especially useful if you are using the Hog 3PC or Rack Mount Unit versions of the console.

You can toggle keyboard shortcuts on and off using the Pause or Break key on the computer keyboard. When shortcuts are enabled (known as map mode), the computer keyboard is mapped to the shortcuts; when disabled, text entry via the computer keyboard is possible. The current status is shown in the Command Line Toolbar; see *Figure 35.1, "Keyboard Status in the Command Line Toolbar"*. Whenever possible, Wholehog OS intelligently disables the keyboard shortcuts when text entry is expected (after pressing Set or double clicking in a cell). When the text entry session is completed, the shortcuts are automatically re-enabled.

By default, shortcuts are disabled when you start a show. When shortcuts are disabled, only the shortcut mapped to the Set key remains functional to allow quick labeling from the external keyboard.

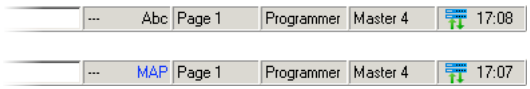


Figure 35.1. Keyboard Status in the Command Line Toolbar

The following table show how keys map to Wholehog OS functions when using a US keyboard:

Function	Keystroke	Function	Keystroke
Toggle Shortcuts	Pause or Break	Main GO	} or) or Space
Pig	CTRL	Main Pause	{ or (
Open	ESC or O	Skip Fwd	K
Set	NumLock or Insert	Skip Back	J
Intensity	F11	Goto	G
Position	F2	Release	Z
Colour	F3	Pig + Release	ALT + Z
Beam	F4	Assert	A
Effects	F7	Next Page	: or ;
Macro	F5	@	' or @
Group	F1	Full	~ or #
Fixture	F12	Thru	*, > or X
Scene	F9	Minus (-)	- or _
Cue	F10	Plus (+)	= or +
List	F8	slash (/)	/ or ?
Page	F6	Point (.)	. or >
Record	R	Choose Master 1-10	ALT + 1 - 0
Merge	E	GO Master 1-10	TAB + 1 - 0
Move	M	Pause Master 1-10	Backspace + 1-0
Copy	P	Undo	CTRL + Z
Delete	D or Delete	Redo	CTRL + Y
Update	U	Visual Cut	CTRL + X
Live	V	Visual Copy	CTRL + C
Time	T	Visual Paste	CTRL + V
Setup	S	Visual Select Range	CTRL + cursors
Control	L	Backspace	backspace
Fan	F	Enter	Enter
Highlight	H	GM	\ and or |
Blind	B	Central Choose	ALT + -
Clear	C	Bottom Right toolbar	TAB + F1 - F12
Next	N	Top Left toolbar	Shift + F1 - F12
Back	Y	Top Right toolbar	ALT + F1 - F12

Section 36: Pig Key Commands

The Pig key is the Wholehog OS's main **modifier** key; it can be used to modify or extend many of the console's commands. The following tables lists its uses, with keys and buttons, and with other controls.

Pig with Keys and Buttons	
Use	*Result*
Pig + @	When patching with View by DP enabled, unpatches the selected fixtures.
Pig + Backspace	Removes values from the currently highlighted cells in the Programmer or editor.
Pig + Blind	When leaving blind mode, parameters will fade to their new values in the assigned or default fade time, rather than snapping to their new values.
Pig + Choose	Opens the playback options for the cuelist on the selected master.
Pig + Copy	Copies the contents of the currently selected cells.
Pig + Flip	When using Flip to cycle a fixture through its flip positions, goes through the possible positions in the reverse order to Flip without Pig.
Pig + Go	Equivalent to pressing Go on all masters.
Pig + Next (on the View Toolbar)	Changes the view to the previous view, rather than the next view.
Pig + Next Page	Changes the page to the previous page, rather than the next page.
Pig + Nudge Up (above the I-Wheel)	Nudges the intensity up by half the set nudge value.
Pig + Nudge Down (below the I-Wheel)	Nudges the intensity down by half the set nudge value.
Pig + Open + Backspace	Opens the Launched Processes window.
Pig + Open + Colour	Opens the Colour Picker rather than the Colour Directory.
Pig + Park	Unparks selected fixtures, rather than parking them.
Pig + Record	Pastes into the currently selected cells.
Pig + Release	Releases all masters.
Pig + Setup	Toggles the worklight on and off (Road Hog only).
Pig + Size (on the Window Control Toolbar)	Cycles through the possible window sizes in the reverse order.
Pig + Touch	Un-touches specified parameters and fixtures, rather than touching them.
Pig + Undo	Redoes the last undone action.
Pig with the arrow keys	Extends the selected cells or directory items in spreadsheets and directories.
Pig when pressing a button in a directory	Overrides the effect of the Guard button.

Pig with Other Controls	
Use	*Result*
Pig when entering text with the on-screen keyboard	Acts as a shift key, to type upper case characters.
Pig with the I-Wheel	Intensities are increased or decreased in proportion to their individual level, rather than all intensities changing by the same amount. For example, if fixture 1 is at 10%, 2 at 50% and the wheel is increased by 10%, then fixture 1 will move to 11% and 2 will move to 55%.
Pig with parameter wheels	Moving the parameter wheel with Pig allows fine adjustment of the parameter, so that each turn of the wheel will change the parameter value by a smaller amount, making exact adjustments easier.
Pig when dragging files in the File Browser pane of the Show Manager window	Copies the dragged files, rather than moving them.
Pig when starting up the console	Opens the boot menu.

Section 37: Upgrading and Care of the Console

37.1 Updating Software

37.1.1 Updating the Console Software

Wholehog software can be easily upgraded on a Wholehog III console using a fpspkg file and other Wholehog OS systems with an msi file.

To upgrade software from an fpspkg or msi file downloaded from the Flying Pig Systems website (www.flyingpig.com):

1. Check that the file has a name like gut_x.x.x._(Build xx).fpspkg or Hog3PC-Win32-golden_x-x-x-xx.msi.
2. Copy the file to external media such a CD, Zip disk or USB Flash drive (note that flash drives are not currently supported by the Wholehog III console).
3. Start the Wholehog software.
4. When the Start window appears, press the Software button, located on the bottom of the Start window.
5. Insert the CD, Zip disk or Flash drive containing the upgrade file.
6. Select CD-ROM or Zip as the source of the upgrade file, as appropriate.
7. Select the file containing the software version to upgrade, and press OK.
8. Wholehog OS will continue with the upgrade without further interaction. Note that this may take several minutes. After it finishes the upgrade, Wholehog OS will restart.

37.1.2 Clean Install

You may occasionally need to do a 'clean install' of the software, which completely replaces the software rather than just upgrading parts that have changed in the new release. This isn't recommended unless you have been having problems with the console and you have been advised to do a clean install by Flying Pig Systems support staff.

When using a Road Hog console, refer to *Restoring the Road Hog System Files (p.361)* for image recovery instructions. The information below details performing a clean install on a Wholehog III console or Rack Mount Unit.

Important

Before installing new software, ensure that your show data is backed up. A Full Install will erase all data on the console's hard drive.

To do a clean install:

1. First ensure that your data stored on the hard drive is backed up onto CD or Zip disk. See *Backing Up (p.123)*.
2. Restart the console, holding down the Pig key until a boot menu appears.
3. Place the software CD-ROM in the console's drive and close it.
4. Use the Up and Down arrow keys to select Full Install in the menu, and then press Enter.
5. The installation will occur without further user interaction. Note that it will take several minutes to complete.

Occasionally it may also be necessary to update the console's BIOS, which is the software stored in memory that starts the console up. This can also be done by selecting an option from the boot menu which will read the BIOS from a CD-ROM. You should only do this when explicitly instructed and care should be taken to follow all directions, as an improper BIOS installation can leave the console unusable.

37.1.3 Updating the DMX Processor Software

Normally, updating the console software will also update the software of connected network processors. If necessary, you can update the software manually:

1. Setup → Network : open the Network window.
2. Press the Software Update button.
3. A window will open and display a list of DMX Processors whose software does not match the console. Click on the check boxes of DMX Processors that you want to update, and press Reload.
4. The console will update the software. Wait a couple of minutes until all DMX Processors are shown as found in the Network window.

Sometimes, if the console and network processor are running different software versions, the console may not recognise the network processor on the network. To overcome this, you can force the network processor to update its software from the console:

1. Turn off the mains power to the network processor. Check that it is connected to the console on the network.
2. Turn the network processor back on, while holding down the ◄ key on the network processor's front panel.
3. The network processor will download its software from the console.

DMX Processor 8000 Reset Options

The keys on the front panel of the DMX Processor 8000 are used for standard menu navigation. However as the unit boots you can view specific boot information via a scroll bar. Once the DMX Processor 8000 is fully booted, it displays the standard menu. In addition the following reset options are available:

Hard Reset: to force a hard reset of the DMX Processor 8000, hold the ● and ➢ buttons for four seconds. Once the reset begins you will see I/O Board Disconnected on the display.

DMX Board Firmware Reload: to reload the DMX board firmware from the Processor's front panel, hold down any single key as the unit is powered on. Once the process begins you will see the DP8000 Bootloader message on the display. After about one minute the firmware will be reloaded.

CPU Board Firmware Reload and Restore to Defaults: to reload the CPU board firmware hold down the ➢, ● and ➢ keys as the unit is powered on. The DMX Processor 8000 will then reload its firmware from the network. Once the process begins you will see the Forcing Software Reload message on the display.

37.2 Care of Touch Screens on Wholehog Consoles

The touch panels and liquid crystal displays (LCDs) require some care in use to ensure their longevity:

- Do not allow sharp objects to come into contact with the screen. Objects such as the eraser end of a pencil can provide an alternative to fingertips.
- If you need to clean the screens, use a soft, dry, lint-free cloth; don't use any solvents, chemical or abrasive cleaners.
- The LCD operating temperature must be between 0 and 45 degrees Celsius (32 to 113 Fahrenheit).
- You should keep the LCDs out of direct sunlight. Too much exposure to the sun may cause the screens to turn black, requiring several hours to cool and return to normal. If this happens you can use *External Displays (p.67)* and the *Trackball and Wheels (p.68)* instead. To avoid this, use the Wholehog III in the shade when programming outdoors.

37.3 Front Panel Care

The front panel needs no particular care to ensure longevity over and above the obvious. You can clean it with a soft, dry, lint-free cloth; don't use any solvents, chemical or ab-

rasive cleaners. Do not allow fluids, dirt, or other doubtful substances to come into contact with the console.

In the event of fluid getting into the console disconnect mains power immediately and consult your nearest service agent. Some support contact details are shown in the front of this manual.

37.4 DMX Processor 8000 Hardware Installation and Maintenance

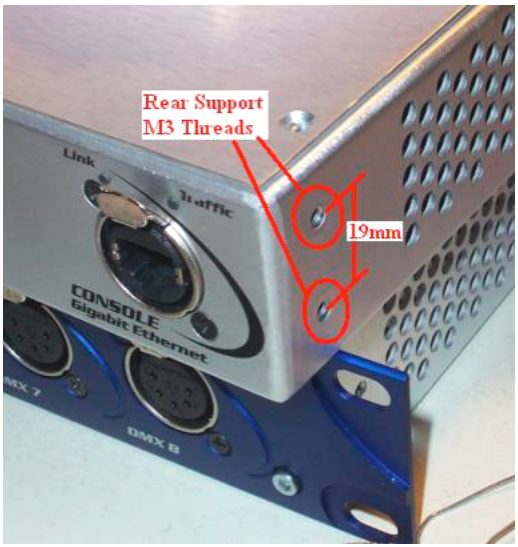
37.4.1 DMX Processor 8000 Installation

The DMX Processor 8000 has several features to help ensure a reliable installation:

USB Retainer: the back of the DMX Processor 8000 includes a thumbscrew retainer for securing USB cables. This is recommended to prevent the USB from becoming disconnected accidentally.

V-Lock Style Locking Power Connector: the DMX Processor 8000 ships with a special IEC cable with a locking power connector. In addition a standard IEC cable can be used.

Rack Mounting and Back Support: when installing the DMX Processor 8000 in a rack, ensure the cooling vents are not obstructed and that sufficient ventilation is possible. DMX Processor 8000 is 280mm deep and may require back support in some racks. The unit is equipped with four M3x0.5 threaded inserts on the back of the chassis for attachment of rack supports. The mounting screws should not protrude more than 3mm into the chassis.



Refer to *www.flyingpig.com/support/hog3/techdrawings/* for detailed support bracket drawings.

37.4.2 DMX Processor 8000 Maintenance

Washable Air Filter: the DMX Processor 8000 includes a washable air filter as part of its air management system. Rinse the filter only in clean warm water and ensure it is dry before re-installing. When inserting the filter, face the plastic frame towards the power connector.

If the filter becomes worn or overly soiled, replace it immediately. Replacement filters are available from High End Systems.

Cooling Fans: the cooling fans within the DMX Processor 8000 are software controlled and only run as needed. They may cycle on and off during normal operation. You can monitor the temperature and fans using the Diagnostics pane of the DMX Processor Settings window:

1. Setup → Network : open the Network window.
2. Select the DMX Processor in the list by clicking on its Network Number, and press the Settings button to open the DMX Processor Settings window.
3. Select the Diagnostics pane; see *Figure 37.1, "The Diagnostics pane of the DMX Processor Settings window"*.

Tip

The middle fan will only enable under extreme heat conditions and will register a zero value under normal circumstances.

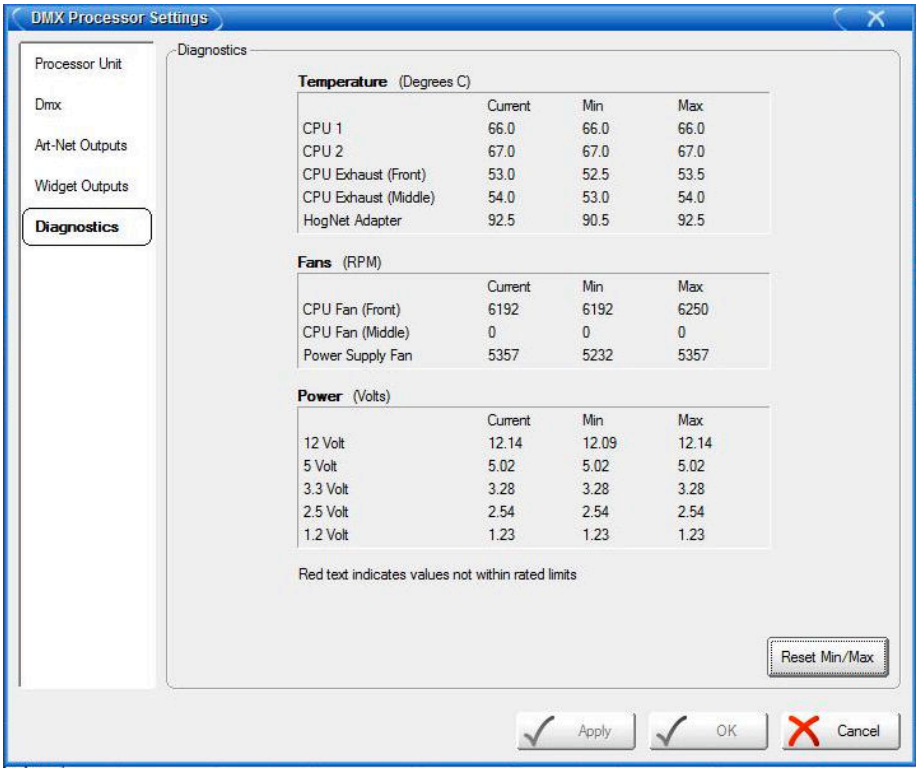


Figure 37.1. The Diagnostics pane of the DMX Processor Settings window

Section 38: Getting Help

You can open Wholehog OS's built-in User Manual by pressing the Help button on the Window Control Toolbar at the top of the right-hand screen. This will open the relevant part of the User Manual for the frontmost window.

If you are having problems with the console, try the trouble shooting guide below. If you cannot rectify the problem, or you think that it is because the console is not working as it should, please contact *support@flyingpig.com*, following the guidelines in *Reporting Problems with the Console (p.413)*.

38.1 Troubleshooting

38.1.1 The console appears to have crashed or frozen

Wholehog OS runs as a series of separate 'processes' that can start and stop individually. Often, when the console appears to have crashed or frozen, it is only one process that is causing the problem, while the rest of the processes are still running normally. In particular, an editor or the desktop may crash, while playback continues normally. Before restarting the entire console, therefore, you should see if the problem can be cured by restarting the individual process:

1. Pig + Open + Backspace : open the Launched Processes window; see *Figure 38.1, "The Launched Processes window"*.
2. Kill processes that are not responding by right clicking on them and selecting Kill.
3. Restart the process by right clicking and selecting Restart. An exception is the Editor process which will disappear when killed; you can restart it by re-opening the Programmer or an editor window.

38.1.2 The console isn't talking to the DMX Processors

1. Check that the display on the DMX Processor shows 'Outputs Active'. If it does not, then see if it is in the process of getting the show data or connecting, or crashed. if it has crashed, restart it by disconnecting the mains power, waiting a few moments, and reconnecting it.
2. Check the network cabling. If the DMX Processor is connected directly to the console then an RJ45 **cross-over** cable needs to be used. If the DMX Processor is connected via a **switch** or **hub** then normal (non-crossover) RJ45 cables need to be used. The Link light will be lit on the DMX Processor if the correct connection has been made.

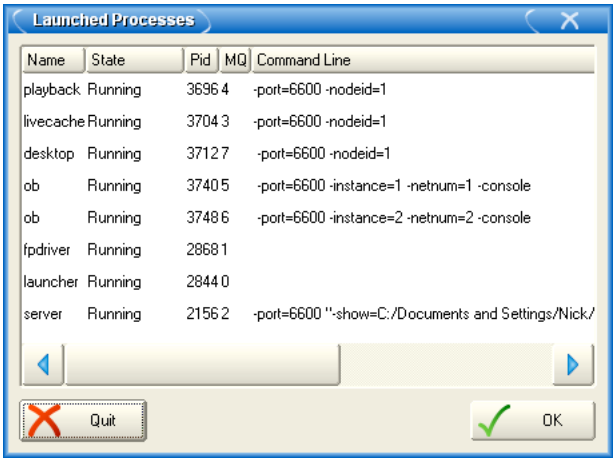

Launched Processes
Name State Pid MQ Command Line
playback Running 36964 -port=6600 -nodeid=1
livecache Running 37043 -port=6600 -nodeid=1
desktop Running 37127 -port=6600 -nodeid=1
ob Running 37405 -port=6600 -instance=1 -netnum=1 -console
ob Running 37486 -port=6600 -instance=2 -netnum=2 -console
fpdriver Running 28681
launcher Running 28440
server Running 21562 -port=6600 "-show=C:/Documents and Settings/Nick/
Quit
OK

Figure 38.1. The Launched Processes window

3. Check the network settings. The DMX Processor and console both need to be on the same subnet.
4. Check the **port number** setting. The DMX Processor and console both need to have the same Port Number. See *Network Settings (p.85)* and *Setting Up the Network (p.75)*.
5. Check the software. The DMX Processor and console both need to be running the same version of the software; see *Updating the DMX Processor Software (p.404)*.

38.1.3 The console doesn't start, or shuts down shortly after switching it on

- If a software update has failed the console can get into a state where it either fails to start properly, or it goes immediately to the shutdown screen. A full re-install will be necessary; see *Clean Install (p.403)*.

38.1.4 The playback controls don't behave as expected

- Check that the playback controls haven't been mapped to different functions to their normal ones. See *Configuring Playback Controls (p.313)*.

38.1.5 The Front Panel Reboots Unexpectedly

Care should be taken when transmitting a personal radio while in close proximity to a console front panel. Always keep radio transmitting devices at least eight inches from the console surface.

In the event of a radio transmitting within close proximity of the console, the front panel firmware may reboot causing a temporary loss of control of the keys and hardware

for approximately 20 seconds. During this time the desk lights may dim as well. After 20 seconds the front panel will reboot and normal functionality will be restored. If the problems persist, move the radio transmitting device further from the console.

38.2 Reporting Problems

When reporting problems with the console (known as "bugs") it is important that the information you provide is as clear and detailed as possible to ensure that the problem can be fixed. Please follow the guidelines below.

Please report bugs to:

support@flyingpig.com

24/7 phone support: +1-800-890-8989

http://forums.highend.com

38.2.1 Reporting Problems with the Console

Please include the following information in your bug report:

1. The piece of hardware that exhibited the problem, including the version number of the software being used.
2. The actions taken that induce the problem in the first place, including whether the problem is repeatable using the same actions.
3. The symptoms of the problem.
4. The network configuration of system.
    - The type and number of Wholehog console systems in use
    - How many DMX Processors and MIDI/Timecode Processors.
    - What sort of routers/hubs are being used.
    - Other PC's or applications (such as Artnet, ETCNet, Web Servers, and so on) that are sharing the same network.

Once a problem has been reported it will often be necessary for the support team at Flying Pig Systems to clarify some of the details and obtain additional information. Typically this ends up with a request for a copy of the show, so a backup of the show should be transferred to a PC where it can be mailed to *support@flyingpig.com*.

Tip

The version number of the software installed on your console can be found on the System Info pane of the Control Panel window.

38.2.2 Reporting Problems with Hog 3PC

In the event of a failure with Hog 3PC, it is important to provide as much information as possible. Different computer configurations, other applications, and additional hardware may all have unexpected results. When reporting errors, please provide the following information:

- Name
- Date
- Hog 3PC software version and build number
- Operating system
- Computer specifications
- Number of displays
- Connected USB devices
- Networked devices
- Other running applications
- Detailed description of the problem including instructions to reproduce (if possible) and the exact syntax used
- List of any errors reported by the software

If Hog 3PC crashes or fails, it will output a .dmp file in the application directory, for example 'C:\Program Files\Flying Pig Systems\Hog3PC' (if you accepted the default location when you installed Hog 3PC). Please send this .dmp file along with your bug report to *support@flyingpig.com*.

38.2.3 Reporting Problems with the User Manual

Please include the following information in your bug report:

1. The nature of the problem:
    - Missing information.
    - Incorrect information.
    - Unclear or ambiguous information.
    - Unable to find information in the index.
2. The section number where the problem is.

3. The version number of the manual. In printed and PDF editions, you can find this on the title page at the start of the manual. The on-line help within the console shows the version on the main contents page; you can go to this page by clicking 'home' at the bottom of any page.

38.2.4 About Software Version Numbering

The software version number is made up of four parts: the major version number, the minor version number, the current release number, and the build number. For example:

1.3.8 (772) : 1 is the major number, 3 is the minor version number, 8 is the current release, and 772 is the build

38.2.5 About Beta Software

As new releases of Wholehog OS are developed, High End Systems relies on input from console users. If you are interested in learning more about the High End Systems Software Testing Program, please visit *www.flyingpig.com*.

Section 39: Servicing

This console must be serviced by qualified personnel. The information in this section is intended to assist qualified personnel only. For information on the care of the console, see *Upgrading and Care of the Console (p.403)*.

39.1 Replacing Wholehog III Touch Screens

Caution

Always shut down and disconnect the mains power before removing the front panel.

Damaged touch screens are easily replaced:

1. With the LCD box in the vertical position undo the six screws using a 4mm allen key.
2. Carefully remove the LCD panel and Soft Key strips.
3. With the LCD box in the horizontal (flat) position undo the four thumbscrews of the panel to be changed.
4. Unplug the touch screen cable from the central PCB.
5. Very carefully lift off the touch screen leaving the Soft Key PCBs in place.
6. Replace with a new touch screen making sure the panel is pushed to the *right* for correct alignment.
7. Replace and gently tighten the thumbscrews and re-connect the cable ensuring correct pin alignment.
8. With the LCD box back in the vertical position fit the LCD screen and Soft Keys.
9. Replace and tighten the six screws starting with the centre pair.
10. Calibrate the touch screen. See *Touch Screens (p.66)*.

39.2 Replacing Faders

Caution

Always shut down and disconnect the mains power before removing the front panel.

Damaged or dirty faders are easily replaced:

1. Remove the parameter wheel knobs using a 2mm allen key to loosen the grub screws.
2. Pull off the fader knobs and position the faders at 50%.
3. Undo the four screws with a 4mm allen key, and carefully lift off the front panel. Note that the front panel is intentionally concave.
4. Gently unplug the fader's flying lead and lift the fader to unclip it from the PCB.
5. Clean fader if required. See *Cleaning Faders (p.418)*
6. Fit the new fader in place ensuring that it sits completely flat against the PCB; *this is crucial*.
7. Reconnect the fader flying lead and position the fader at 50%.
8. To re-assemble, follow steps 3 through 1.

39.3 Cleaning Faders

Faders are often unnecessarily discarded when all they need is a clean:

1. Remove the dirty fader. See *Replacing Faders (p.418)*.
2. Undo the top crosshead screw (furthest from the flying lead) using a small Philips screwdriver.
3. Remove the top end cap.
4. Very carefully slide the whole mechanical assembly out from the other, bottom end.
5. Very carefully slide the track assembly out from the bottom end.
6. Wipe tracks and wipers with a dry, clean tissue. Do *not* use solvents.
7. Re-insert track assembly.
8. Very carefully re-insert mechanical assembly.
9. Fit top end cap and replace and tighten screw.

10. Replace the cleaned fader. See *Replacing Faders (p.418)*.

39.4 Replacing the Trackball

Caution

Always shut down and disconnect the mains power before removing the front panel.

To replace the Trackball:

1. Remove the front panel. See *Replacing Faders (p.418)* steps 1 to 3.
2. Lift track ball out of its bezel.
3. Unplug the cable assembly from the trackball PCB
4. Reconnect and replace new Trackball.

Important

The only occasion on which the front panel PCB itself needs to be removed is to access the mass storage devices underneath; a procedure beyond the scope of this manual.

Section 40: Technical Specifications

40.1 Wholehog III Console

40.1.1 Input and Output Connections

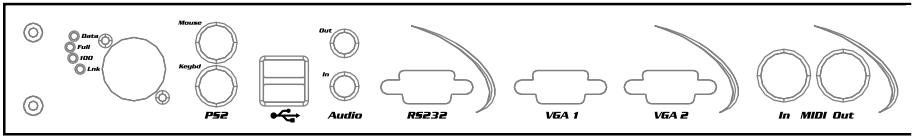


Figure 40.1. Rear panel of the console

From right to left when viewing the console from the back:

Mains in:	IEC 320 connector (5A/250V rated cable supplied) 100-240V, 50/60Hz, 2A maximum 2 x 5x20mm 5A T fuses
MIDI in & out:	Fully compliant Musical Instrument Digital Interface input and output ports
VGA out:	15 pin double density D type IBM/PC compatible VGA/SVGA analogue display outputs (x2)
RS232:	Debug port for service/factory use only
Audio in & out:	3.5mm stereo jack Soundblaster compatible audio line input and output
USB:	Fully compliant Universal Serial Bus 1.0 ports (x2)
Keyboard & mouse:	5 pin mini-DIN IBM/PC PS2 compatible keyboard and mouse
Ethernet:	Neutrik Ethercon or standard RJ45 Fully compliant 10base-T or 100base-TX Ethernet port

40.1.2 Power, Weight and Dimensions

Power:	75W
Weight:	22.5Kg
Dimensions:	760mm (w) x 580mm (d) x 110mm (h), footprint smaller

40.2 DMX Processor 8000

40.2.1 Input and Output Connections

Mains in:	V-Lock style locking IEC 320 connector 100-240V, 50/60Hz, 4A maximum
DMX out:	Neutrik 5 pin female XLR Isolated, Half Duplex DMX512 outputs (x8)
Ethernet:	EtherCon Fully compliant Gigabit Ethernet port (x2)
Expansion:	USB-A 2.0 High Speed (x2)

40.2.2 Power, Weight and Dimensions

Power:	200W
Weight:	2.7Kg
Dimensions:	480mm (w) x 280mm (d) x 45mm (h) 1U, 19 inch rack compatible

40.3 DMX Processor 2000

40.3.1 Input and Output Connections

Mains in:	IEC 320 connector (5A/250V rated cable supplied) 100-240V, 50/60Hz, 0.2A maximum 1 x 5x20mm 1A T fuses
DMX out:	Neutrik 5 pin female XLR Isolated, Half Duplex DMX512 outputs (x4)
Ethernet:	RJ45 Fully compliant 10base-T or 100base-TX Ethernet port

40.3.2 Power, Weight and Dimensions

Power:	10W
Weight:	1.2Kg
Dimensions:	480mm (w) x 118mm (d) x 45mm (h) 1U, 19 inch rack compatible

40.4 Rackmount Control Unit

40.4.1 Input and Output Connections

Mains in:	IEC 320 connector (5A/250V rated cable supplied) 100-240V, 50/60Hz, 1A maximum 2 x 5x20mm 5A T fuses

Other connections and layout are exactly the same as for the Wholehog III console; see *Wholehog III Console (p.421)*.

40.4.2 Power, Weight and Dimensions

Power:	60W
Weight:	3.7Kg
Dimensions:	483mm (w) x 349mm (d) x 45mm (h) 1U, 19 inch rack compatible

40.5 Touchscreen Monitor

40.5.1 Input and Output Connections

Mains in:	External Power Supply with IEC 320 connector. 100-240V, 50/60Hz, 1.5A maximum
Analogue video in:	15 pin double density D type
Digital video in:	DVI-D connector
USB:	Type B USB input socket

40.5.2 Power, Weight and Dimensions

Power:	45W
Weight:	9.8Kg
Dimensions:	434mm (w) x 238mm (d) x 430mm (h)

40.5.3 **Performance**

Display:	17.0" Diagonal active matrix TFT LCD
Native resolution:	1280 x 1024
Input frequency:	31.5 - 80 kHz (H), 56-75 Hz (V)
Contrast ratio:	450:1 (typical)
Viewing angle:	160 x 160 degrees (typical)
Response:	16 ms (typical)
Brightness:	205 cd/m2 (typical)

Section 41: Safety Information

41.1 Safety Information

41.1.1 Warning: For Continued Protection Against Fire

- This equipment for connection to branch circuit having a maximum overload protection of 20 A.

41.1.2 Warning: For Continued Protection Against Electric Shock

1. If this equipment was received without a line cord plug, attach the appropriate line cord plug according to the following code:
    - brown - live
    - blue - neutral
    - green/yellow - earth
2. As the colours of the cores in the mains lead of this equipment may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
    - the core which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol ⏚, or coloured green or green and yellow.
    - the core which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
    - the core which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
3. Class I equipment. This equipment must be earthed.
4. Equipment suitable for dry locations only. Do not expose this equipment to rain or moisture.
5. Disconnect power before servicing.
6. Refer servicing to qualified personnel; no user serviceable parts inside.

41.2 Informations Importantes Sur La Sécurité

41.2.1 Mise En Garde: Pour Une Protection Permanente Contre Les Incendies

- Cet appareil comporte une protection de 20 A contre les surcharges électrique.

41.2.2 Mise En Garde: Pour Une Protection Permanente Contre Les Chocs Électriques

1. Si cet équipement est livré sans prise sur le câble d'alimentation, veuillez connecter la prise de courant selon le code suivant:
    - marron - phase
    - bleu - neutre
    - vert/jaune - terre
2. Débrancher le courant avant d'effectuer des réparations.
3. Cet équipement doit être uniquement utilisé dans des endroits secs. Ne pas l'exposer à la pluie ou l'humidité.
4. À l'intérieur de l'équipement il n'y a pas de pièces remplaçables par l'utilisateur. Confiez l'entretien à un personnel qualifié.
5. Equipement de Classe I. Cet équipement doit être mis à la terre.

41.3 Wichtige Hinweise Für Ihre Sicherheit

41.3.1 Warnung: Zum Schutz Vor Brandgefahr

- Dieses Gerät darf nur an eine Zweigleitung mit einem Überlastungsschutz von höchstens 20 A angeschlossen werden.

41.3.2 Warnung: Zum Schutz Gegen Gefährliche Körperströme

1. Wenn dieses Gerät ohne einen Netzkabelstecker erhalten wurde, ist der entsprechende Netzkabelstecker entsprechend dem folgenden Code anzubringen:
    - Braun - Unter Spannung stehend
    - Blau - Neutral
    - Grün/Gelb - Erde

2. Da die Farben der Leitungen im Hauptanschluss möglicherweise nicht mit den farbigen Markierungen die die Anschlussklemmen identifizieren übereinstimmen, fahren sie wie folgt fort:

    - Die Grün und Gelb gefärbte Leitung muss im Stecker mit der mit dem Buchstaben E oder dem Erde Symbol markierten ⏚, oder der Grün und Gelb gefärbten Anschlussklemme verbunden werden.
    - Die blau gefärbte Leitung muss mit der mit dem Buchstaben N oder der Schwarz gefärbten Anschlussklemme verbunden werden.
    - Die Braun gefärbte Leitgun muss mit der mit dem Buchstaben L markierten oder rot gefärbten Anschlussklemme verbunden werden.

3. Dieses Gerät gehört zur Klasse I. Dieses Gerät muß geerdet werden.
4. Diese Geräte sind nur zum Einbau in trockenen Lagen bestimmt und müssen vor Regen und Feuchtigkeit geschützt werden.
5. Vor Wartungsarbeiten stets den Netzstecker ziehen.
6. Servicearbeiten sollten nur von Fachpersonal ausgeführt werden. Das Gerät enthält keine wartungsbedürftigen Teile.

41.4 Información Importante De Seguridad

41.4.1 Advertencia: Para Protección Continua Contra Incendios

- Este equipo debe conectarse a un circuito que tenga una protección máxima contra las sobrecargas de 20 A.

41.4.2 Advertencia: Para La Protección Continua Contra Electrocuciones

1. Si se recibió este equipo sin el enchufe de alimentacion, monte usted el enchufe correcto según el clave siguente:

    - moreno - vivo
    - azul - neutral
    - verde/amarillo - tierra

2. Desconecte el suministro de energía antes de prestar servicio de reparación.

3. Este equipo se adecua a lugares secos solamente. no lo exponga a la lluvia o humedad.
4. Derive el servicio de reparación de este equipo al personal calificado. El interior no contiene repuestos que puedan ser reparados por el usuario.
5. Equipo de Clase I. Este equipo debe conectarse a la tierra.

41.5 Importanti Informazioni Di Sicurezza

41.5.1 Avvertenza: Per Prevenire Incendi

- Questa apparecchiatura e' da collegarsi ad un circuito con una protezione da sovraccarico massima di 20 amperes.

41.5.2 Avvertenza: Per Prevenire Le Scosse Elettriche

1. Se questa apparecchiatura è stata consegnata senza una spina del cavo di alimentazione, collegare la spina appropriata del cavo di alimentazione in base ai seguenti codici:
    - marrone - sotto tensione
    - blu - neutro
    - verde/giallo - terra
2. Disinnestare la corrente prima di eseguire qualsiasi riparazione.
3. Questa apparecchiatura e' da usarsi in ambienti secchi. Non e' da essere esposta ne alla pioggia ne all' umidita'.
4. Per qualsiasi riparazione rivolgersi al personale specializzato. L' utente non deve riparare nessuna parte dentro l' unita'.
5. Aparecchio di Classe I. Questa apparecchiatura deve essere messa a terra.

41.6 Vigtig Sikkerhedsinformation

Advarsel: Beskyttelse mod elektrisk chock.

VIGTIGT! LEDEREN MED GUL/GROEN ISOLATION MAA KUN TILSLUTTES KLEMME MAERKET ⏚ ELLER ⏚.

41.7 安全に関する情報

41.7.1 警告: 火災からの継続的な保護の為に

- この装置には分岐回線への接続の為の最大 20 A の過負荷防止機構を持っています。

41.7.2 警告: 感電に対する継続的な保護の為に

1. プラグの付いていない状態でこの装置を受け取った場合は、以下のコード表にしたがって、適切にプラグを取り付けて下さい。:
    - Brown（茶色） - Live（ライブ）
    - Blue（青） - Neutral（ニュートラル）
    - Green/Yellow（緑/黄色） - Earth（アース）
2. ここで説明されている各部品に関する色があなたの持っているプラグの端末の色と対応していない場合があります。以下にしたがって接続して下さい。:
    - Green/Yellow（緑/黄色）のケーブルを、プラグの端末に E もしくは アースのシンボル ⏚ の表記のある物に接続するか、Green/Yellow（緑/黄色）の物に接続して下さい。
    - Blue（青）のケーブルを、プラグの端末にNが表記された物もしくは 黒に塗られた物に接続して下さい。
    - Brown（茶色）のケーブルを、プラグの端末にLが表記された物もしくは 赤に塗られた物に接続して下さい。
3. この装置は Class I 機器です。この為この装置はアースしなければなりません。
4. この装置は乾燥した状態でのみ使用出来ます。この装置を雨又は湿気にさらさないで下さい。
5. 修理点検を行う場合は事前に電源を切り離して下さい。
6. 整備点検の項目 は資格を持った技師の為の物です。; ユーザーによって修理点検を行えるパーツは存在していません。

Section 42: Front Panel Diagrams

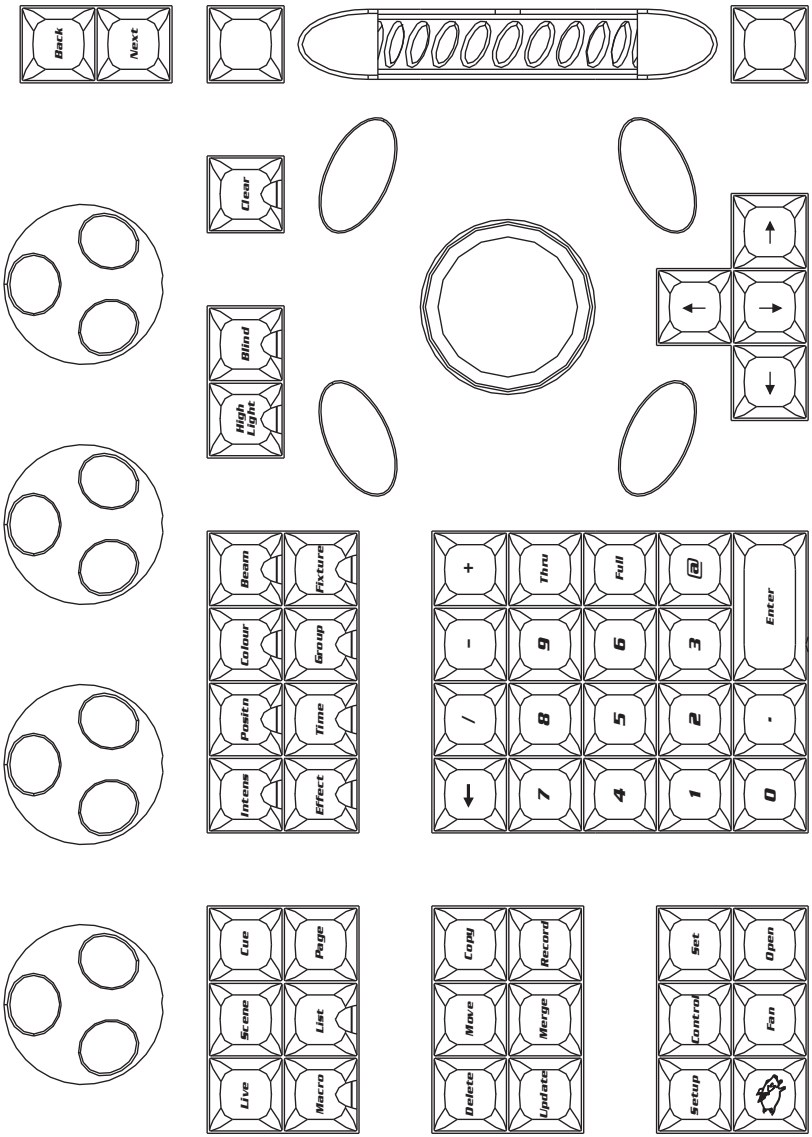


Figure 42.1. Programmer section of the front panel

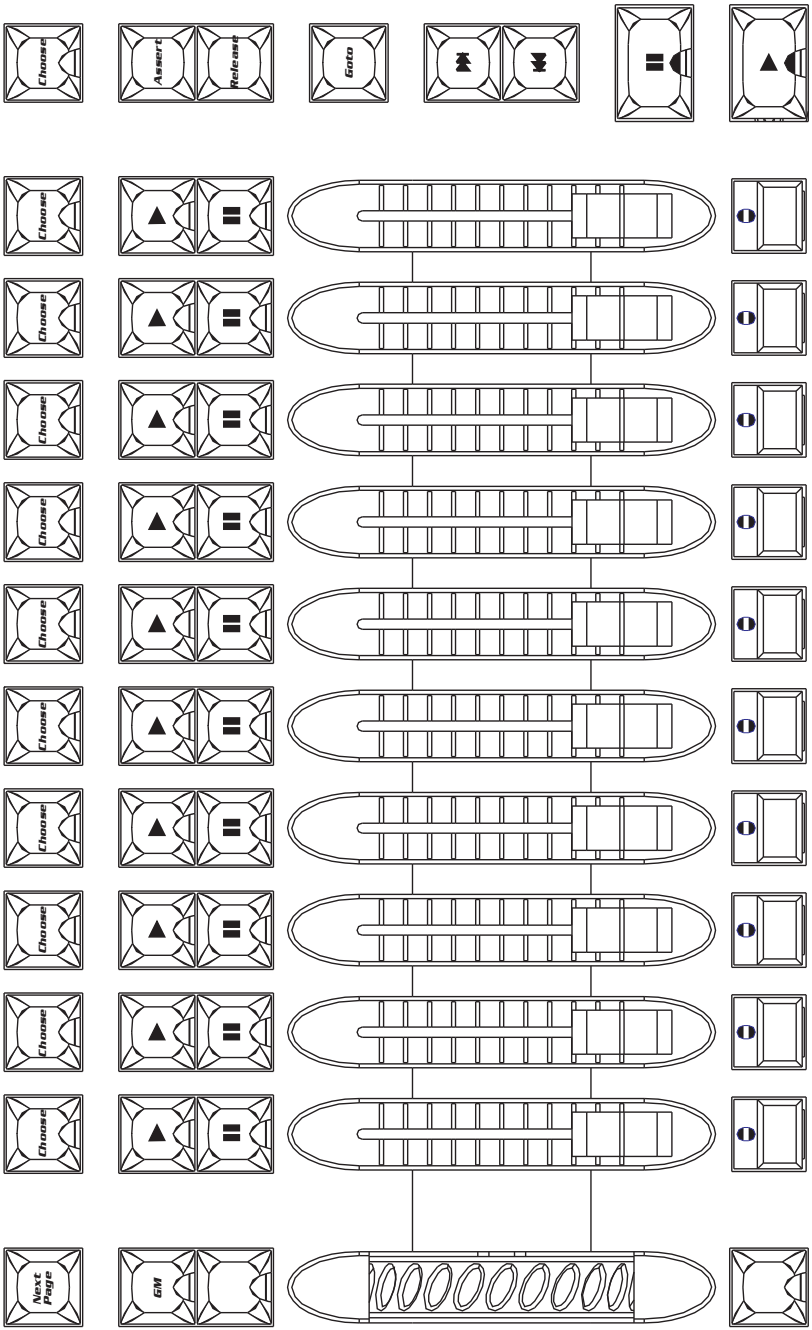


Figure 42.2. Playback section of the front panel

Glossary

1

10 Base-T	An older flavour of Ethernet, that is slower (10 MBits per second) than the 100 Base-T used by Wholehog components. If connected to other equipment that only supports this flavour, then Wholehog components will automatically detect this, and run their Ethernet connections at this slower speed. However this is not the recommended way to set up your network. See Also *100 Base-T*.
100 Base-T	A flavour of Ethernet, that supports data rates of up to 100 MBits per second. All Wholehog components support this flavour of Ethernet, and comply with all relevant standards, so networking equipment designed for 100Base-T should be compatible with the Wholehog. See Also *10 Base-T*.

A

@ button	Means 'at' and can be used for assigning levels or patching via the keypad.
abstraction layer	Wholehog OS separates ('abstracts') the user from the details of how fixtures work. For example, most values are expressed in real world values such as degrees of rotation, rather than DMX values.
accessories	Extensions to the console or network can range from expansion wings, to DMX Processors. See Also *playback wing*, *widget*, *DMX Processor*.
address	See *DMX address*.
attribute	See *parameter*.
automated light	See *fixture*.

B

beam	The distribution and quality of the fixture's beam. Such qualities may be changed through the introduction of parameters such as gobo, gobo rotation, soft or sharp edges, iris and diffusion. See Also *gobo*, *iris*, *diffusion*.
blocking cue	A blocking cue prevents changes made to earlier cues from tracking through to later cues. See Also *tracking*.
board	See *console*.
booting up	See *start up*.

brightness — See *intensity* .

buddying — During fanning, buddying keeps fixtures in 'gangs' that all take the same parameter value.
See Also *fanning*.

button — An on-screen control operated by clicking with the mouse or trackball, or directly by pressing then on the touch screens. In this manual the word 'key' is reserved for hardware buttons on the console's front panel.

C

cell — A single rectangle in a spreadsheet, containing a value.
See Also *spreadsheet*.

chase — A series of cues, that run automatically, connected with link and delay attributes.
See Also *cue*, *cuelist*.

chroma — See *hue*.

colour — Fixture colour, achieved through colour wheel, gel string or colour mixing. A colour may have three attributes: intensity, hue and saturation.
See Also *intensity* , *hue*, *saturation*.

command line — A method of entering information into the Programmer, using the numerical keypad and the @ button.
See Also *Programmer*.

console — The user interface of a lighting control system. A Wholehog console is one component of a network that may include other Wholehog consoles, expansion wings, external devices, offline editors and visualisers, along with dimmers and fixtures.
See Also *visualiser*, *playback wing*.

console identifying number — The number that identifies the console when it is operating as part of a network.

conversion curve — A curve that defines the relationship between the plotted parameter value and the DMX value sent to the dimmer or fixture. Conversion curves are like dimmer curves or profiles on other consoles, and should not be confused with paths. Conversion curves are properties of the fixture, while the path is a property of a cue.
See Also *path* .

crossfade — A transition between two cues, one replacing the other.

cross-over cable — When you connect two Wholehog components (or computers) together directly, you need to use a special type of Ethernet cable called a cross-over cable. This is different from the normal type of

	Ethernet cable used with hubs and switches (see below). A cross-over cable is supplied with each console and DMX Processor. See Also *Ethernet*.
cue	A look on stage, achieved through the manipulation of fixture parameters recorded as part of a cue list. A cue requires a trigger, either manual or automatic, and has attributes such as fade, wait and delay times. See Also *scene*, *fade time*, *wait time*, *delay time*.
cuelist	A group of cues that run in a specific order consecutively, or even simultaneously. These may be automatically linked to form a chase, or manually triggered. A cuelist is run from a master.

D

default	The value for a setting that Wholehog OS uses if you don't give it a value. For example, there is a default fade time used when you record a cue without specifying a fade time. You can specify the defaults to be used in many cases.
default value	A parameter value which has not been adjusted by the user. This value is assigned by the fixture's Library, and may not always be zero. For example, the default value of Shutter Open/Strobe Off may be Open. See Also *touched value*, *tracking*.
delay time	The time the console waits before starting a cue's crossfade. See Also *wait time*, *crossfade*, *path* .
desk	See *console*.
desk channel	Single conventional lights that only have intensity control via a dimmer are defined as desk channels by Wholehog OS. By contrast, automated lights are referred to as fixtures. See Also *fixture*.
desktop view	An user-defined arrangement of windows that can be accessed with a single button press from the View Toolbar.
DHCP	Dynamic Host Configuration Protocol is a way for a computer to ask a master computer on a network to assign it an IP address when it connects. Many existing networks are configured this way, and Wholehog OS supports this system. You should talk to the administrator of the network you want to connect to to find out more. See Also *Ethernet*, *IP address*.
diffusion	A parameter that effects the beam quality, allowing a softening or stretching of the beam. Not to be confused with beam focus where the beam edge is adjusted.
dimmer curve	See *conversion curve*.

directory — A window which displays palettes, scenes or groups.
See Also *palette*.

DMX — Short for DMX 512, DMX is the communications protocol most commonly used to connect lighting consoles to fixtures and dimmers.

DMX address — A number between 1 and 512 that identifies a controllable parameter of a fixture. Each fixture or group of dimmers has a 'start address', the first of the range of DMX addresses that it uses.

DMX universe — A single DMX output with 512 channels is known as one DMX universe. A Wholehog network may support many universes each with fixture addresses between 1 and 512.
See Also *DMX Processor*.

DMX Processor — A nineteen inch, rack mounted network node that distributes 1 or 4 DMX outputs. There may be many DMX Processors within a lighting control network.
See Also *node*.

down time — See *out time*.

E

editor — A window for editing the contents of cues, scenes, groups or palettes.
See Also *Programmer*.

effects engine — The Wholehog OS effects engine provides the opportunity to create movement sequences. The engine contains library shapes, whilst allowing for custom effects to be created.

encoder wheel — See *Parameter Wheel*.

Ethernet — A defined way of connecting computer equipment together. It comes in a variety of flavours.
See Also *10 Base-T*, *100 Base-T*, *IP address*, *hub*.

F

fade time — Time in which fixtures crossfade between the parameter levels of two cues - one incoming, one outgoing.
See Also *split fade*, *in time*, *out time*.

fanning — A way of quickly assigning fixture parameters to an evenly spaced range of values. For example, you could use fanning to assign the intensity of 10 fixtures to 10%, 20% ... 90%, 100% in a single operation.
See Also *buddying*.

fixture — Lantern, instrument, lamp or moving light unit. In this manual the word fixture is used to refer to automated lights, as opposed

	to 'conventionals' which are usually controlled by dimmers and assigned to Wholehog OS as desk channels.
fixture library	A data file that contains details of a fixture's parameters, required so that Wholehog OS 'understands' how the fixture works and what it can do. The fixture libraries are an important part of making the console's abstraction layer work. See Also *abstraction layer*.
focus	The position of the light beam of a fixture within space, or the surface it hits. Not to be confused with the beam edge quality.
function	See *parameter*.

G

gamut	The range of colours that a fixture is capable of producing. Each fixture type has its own gamut.
gang	See *buddying*.
gobo	Image placed within the optical system of the fixture, projected onto lit object. Also known as a pattern.
graphical user interface	A way of displaying information, and allowing the user to work with it, in a visual form. Most personal computers use a GUI with windows, buttons and a pointer. See Also *command line*.
group	A way of storing and recalling a selection of fixtures quickly.
GUI	See *graphical user interface*.

H

hard command	See *hard value*.
hard value	The output of a master running a cuelist is a mix of hard and soft parameter values. Hard values are those that are in the current cue, while soft values are those that have tracked through from previous cues. See Also *tracking*.
HTP	Highest Takes Precedence. In this system of operation, the highest value assigned for a parameter is the one that applies. A fixture can be in cues on two masters, and the highest level of the two will be the one seen. HTP is only relevant to intensity parameters where the idea of 'highest' has meaning. See Also *LTP*.
hub	When you want to connect more than two Wholehog components together, then you need a special piece of equipment to allow them to interconnect called an Ethernet Hub or Ethernet Switch. Note

that when connecting a Wholehog component to a hub or switch you should use a normal Ethernet cable and *not* a cross-over cable like the one supplied.
See Also *Ethernet*.

hue — The colour (pigment) element of colour notation.
See Also *saturation*, *intensity* .

I

I-Wheel — The I-Wheel on the right hand side of the console is used to control fixture intensity.

in time — The time of the fade up of the incoming cue during a crossfade. All fixtures that are increasing in intensity will come up over this time.
See Also *split fade*, *path* , *fade time*.

inhibitive master — A master that sets a maximum level on a group of fixtures. If the master is at 80%, then the fixtures will never come above 80% in the console's output.

instrument — See *fixture*.

intelligent light — See *fixture*.

intensity — Fixture brightness, expressed as a percentage. Also part of the HSB method of defining colour.
See Also *hue*, *saturation*.

IP address — On an Ethernet network, each Wholehog component has an address, called an IP address, used to identify it. You can usually use the default addresses, but if you are connecting to an existing network you may need to specify a different address, according to how your network is configured.
See Also *Ethernet*.

iris — Variable mask placed within the optical system of the fixture, allowing the conical beam size to be manipulated. Not to be confused with zoom.
See Also *zoom*.

K

key — A physical button on the console's front panel. This manual reserves the word 'button' for buttons that appear on screen.

knocking out — See *knockout*.

knockout — Knocking out is the process of removing fixtures from the Programmer window, so that they will not be recorded into cues.

L

level	See *intensity* .
look	A stage lighting 'picture', usually created in the Programmer. Once you have created a look you may record it as a scene or cue. See Also *cue*, *scene*.
LTP	Latest Takes Precedence. In this system of operation, the most recent instruction to assign the value of a parameter is the one that applies. A cue run on one master can take control of fixtures set by a cue in another master. See Also *HTP*.
luminaire	See *fixture*.

M

maintain state	The Wholehog OS's Maintain State feature eliminates the common problem with tracking, where playing back cues out of order results in incorrect lighting states on stage. See Also *tracking*.
mask	A method of selecting information that is specific to a palette, fixture, cue, scene or group, when recording, making selections, editing or programming. Typical masks are the parameter masks: intensity, position, colour and beam.
master	A master comprises of Go, Pause, Flash and Choose buttons, as well as a fader. One cuelist maybe run upon one master at one time. Cuelists need not be permanently stored on specific masters and may reside in the cuelist directory. See Also *cuelist*.
memory	See *cue*.
MIDI	Musical Instrument Digital Interface. Allows communication of musical notes, programmes and timing data between electronic instruments and other devices such as lighting consoles. See Also *timecode*.
MIDI Show Control	Subset of MIDI used in the entertainment industry for integrated control of lighting, sound and stage automation.
MIDI/Timecode Processor	MIDI/Timecode Processors are used to bring MIDI and timecode into or out of the network. They support MIDI, MIDI Show Control, MIDI Timecode, Linear Timecode, and Video Timecode. See Also *timecode*.
modifier	A key that is used in conjunction with other keys or buttons, to change the effect that it has. For example, the Pig key. See Also *Pig key*.

moving light — See *fixture*.

multicast — A network protocol or language that computers use to talk to each other over Ethernet. Wholehog OS uses this standard protocol, which means that it can safely be connected to other networks of computers and will not interfere with them. For show-critical situations you should run Wholehog system on its own independent network.
See Also *Ethernet*.

N

network processor — A network device such as a DMX Processor or MIDI/Timecode Processor that handles data coming into or going out of the Wholehog network.
See Also *DMX Processor*, *MIDI/Timecode Processor*.

node — Network nodes are items of equipment connected to the network. Consoles, DMX Processors and Hog 3PC systems are all nodes.
See Also *DMX Processor*, *console*.

O

on stage — The output of the console; more specifically, the fixtures that have non-zero intensities.

out time — The time of the fade of the outgoing cue during a crossfade. All fixtures that are decreasing in intensity will go down over this time.
See Also *split fade*, *path* , *fade time*.

P

page — A preset arrangement of cuelists residing on the masters. Pages can be changed allowing masters to be used by many cuelists.

palette — A stored parameter setting, such as position, for one or more fixtures. Fixtures of different make or type may share the same palette.
See Also *directory*.

pan — One of the parameters, together with tilt, that determines the direction that the fixture points in.

parameter — A controllable property of the light produced by a fixture. For example a fresnel has one attribute: intensity. Moving fixtures have pan and tilt parameters and perhaps colour, beam shape, and so on.

Parameter Wheel — A wheel that facilitates the control of fixture parameters. Parameter Wheels are fixture sensitive: once loaded from the fixture library, parameters are allocated logically to the wheels.

patch	The assignment of DMX addresses to fixtures. See Also *DMX*.
patch point	The set of information that defines where a fixture is patched, including DMX address, DMX universe, and DMX Processor. Some fixtures have multiple patch points. See Also *DMX*, *DMX address*, *universe*, *DMX Processor*.
path	A way of defining the way that a parameter changes during a fade. You could assign a path that makes the fixture parameter snap to its final value at the start of the fade, for example. Paths should not be confused with conversion curves; paths are the properties of a cue, while a conversion curves is the property of a fixture. See Also *fade time*, *conversion curve*.
pattern	See *gobo*.
peripherals	See *accessories*.
Pig key	The Flying Pig symbol button is a modifier key, and may be used in conjunction with other keys to alter their function.
pile on	A system where new objects are added to previous ones, rather than replacing them. Wholehog OS can be assigned to pile on desktop views, so that new windows are opened but ones from the previous view are not closed. See Also *desktop view*.
playback	See *master*.
playback wing	A Wholehog accessory that increases the number of masters available. See Also *master*.
plotting	The process of recording cues for playing back latter. See Also *Programmer*.
point number	A number with a decimal point. Cues are initially given whole numbers, but a point number in order can be used to insert a cue: cue 2.5 between 2 and 3 for example. Such a cue is known as a point cue.
port number	On a computer network, the port number defines a particular type of network traffic. In the case of a Wholehog network, each show running on the network has its own port number, so that a console can identify and connect to a particular show.
position	The position of the light beam of a fixture within space, or on the surface it hits. With most fixtures, the position is determined by the pan and tilt parameters.
preset	See *palette*.
profile	See *conversion curve*.

Programmer	A window where cue and scene data is created or edited. The Programmer takes priority over all commands sent to a fixture elsewhere in the console.

R

rate	See *fade time*.
Rate Wheel	The centre-sprung wheel on the left hand side of the console used for adjusting fade rates.
remainder dim	Used after selecting a fixture or group of fixtures, setting all remaining fixtures to a zero intensity level.

S

saturation	The amount of pigment in colour notation. See Also *hue*, *intensity* .
scene	A single stage look that does not have the attributes of a cue and is not part of a cuelist. A scene can be loaded onto a master, or triggered by a go button. See Also *cue*, *cuelist*.
selection order	The order in which the user selects fixtures into the Programmer or editor. Wholehog OS remembers this and can apply fanning, or effects according to a fixture's place in the sequence. The sequence is recorded as part of groups and palettes. See Also *group*, *palette*.
server	See *show server*.
shape generator	See *effects engine*.
show server	The Wholehog console that 'owns' a show. Other consoles may join the show, but the original console that created the show will remain the show server.
slot	A discrete step in a parameter's range, such as the position of a gobo wheel.
SMPTE	A form of time code that can be used to synchronise the operation of various controllers, for example synchronising lighting to video playback.
Soft Key	The Soft Keys are the row of keys above and below the touchscreens. They mimic the function of toolbars docked along the edge of the screens. See Also *toolbar*.
soft parameter value	See *tracked value*.
speed	See *fade time*.

split fade	A crossfade where the incoming and outgoing cues have different times, causing an imbalanced or dipped fade profile. See Also *crossfade*, *in time*, *out time*.
spreadsheet	A way of displaying values in a grid. Wholehog OS editor windows use a spreadsheet to display parameter values.
start up	The process that the console goes through when it is first powered on.
submaster	See *scene*.
switch	See *hub*.
system zone	See *hub*.

T

TCP/IP	A network protocol or language that computers use to talk to each other over Ethernet. Wholehog OS uses this standard protocol, which means that it can safely be connected to other networks of computers and will not interfere with them. For show-critical situations you should run the Wholehog system on its own independent network. See Also *Ethernet*.
toolbar	A long, thin window with a series of buttons, that generally sits along the top or bottom edge of the screens. When in this position, a toolbar is said to be 'docked'. See Also *Soft Key*.
touch screens	The two LCD screens on the console, which display and allow the user to select information from them.
touched value	A parameter value that has been assigned or edited by the user. Values which are not touched will remain at their default value. See Also *default value*, *tracking*.
tilt	One of the parameters, together with pan, that determines the direction that the fixture points in.
timecode	A method of synchronising the console with other playback sources, such as music, video or film. Wholehog OS supports MIDI, Linear Timecode and Video Timecode. See Also *MIDI*, *SMPTE*, *video timecode*.
timing	Cues have several values that control timing: fade, wait, delay and path. See Also *fade time*, *wait time*, *delay time*, *path* .
tracked value	The output of a master running a cuelist is a mix of hard and tracked parameter values. Hard values are those that are in the current cue, while tracked values are those that have tracked through from previous cues.

See Also *tracking*.

tracking — A method of dealing with cuelists that does not record information in a cue unless it is a change from the previous cue. This allows multiple cuelists to be running at the same time without them interfering with each other.
See Also *hard value*, *tracked value*, *touched value*, *default value*.

U

UDP — A network protocol or language that computers use to talk to each other over Ethernet. Wholehog OS uses this standard protocol, which means that it can safely be connected to other networks of computers and will not interfere with them. For show-critical situations you should run the Wholehog system on its own independent network.
See Also *Ethernet*.

universe — See *DMX universe*.

up time — See *in time*.

USB — Universal Serial Bus: a means of connecting computer peripherals such as keyboards and mice. Wholehog consoles also use USB to connect expansion wings.
See Also *playback wing*.

V

video timecode — A form of timecode that is embedded in a video signal.
See Also *timecode*.

virtual master — A means of running a cuelist without having it attached to a physical master on the console.
See Also *cuelist*, *master*.

visualiser — A real-time computer rendering package, that allows the Programmer to create their lighting virtually before getting to the venue.

W

wait time — The time between the previous cue being triggered and the current one being run automatically. Not to be confused with the delay time.
See Also *delay time*.

white point — A definition of white light used by Wholehog OS's colour calibration system to match the colour of fixtures with different lamp types, such as tungsten and arc.

widget	A device that allows the connection of accessories to the console or PC via USB. Such accessories may range from input control panels to DMX outputs. See Also *universe*, *USB*.

Z

zip disk	Zip disks are like a floppy disk, but with a much higher capacity. They can be used to store, back up, and transfer show files.
zip drive	The Wholehog III console has a drive to read and write zip disks. You can connect an external zip drive to the Hog iPC and Road Hog consoles, and to a PC running Hog 3PC via USB.
zoom	Allows the size of beam/ image to be adjusted whilst maintaining its focus. See Also *iris*.

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